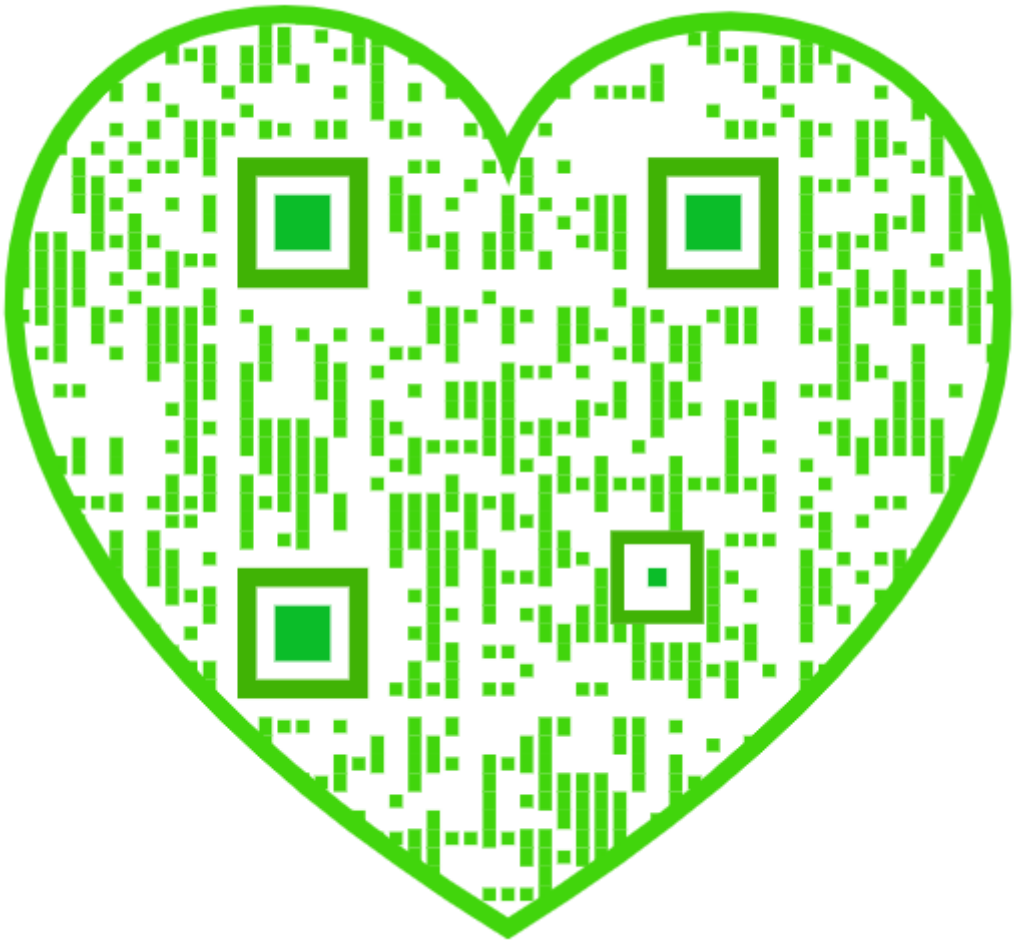

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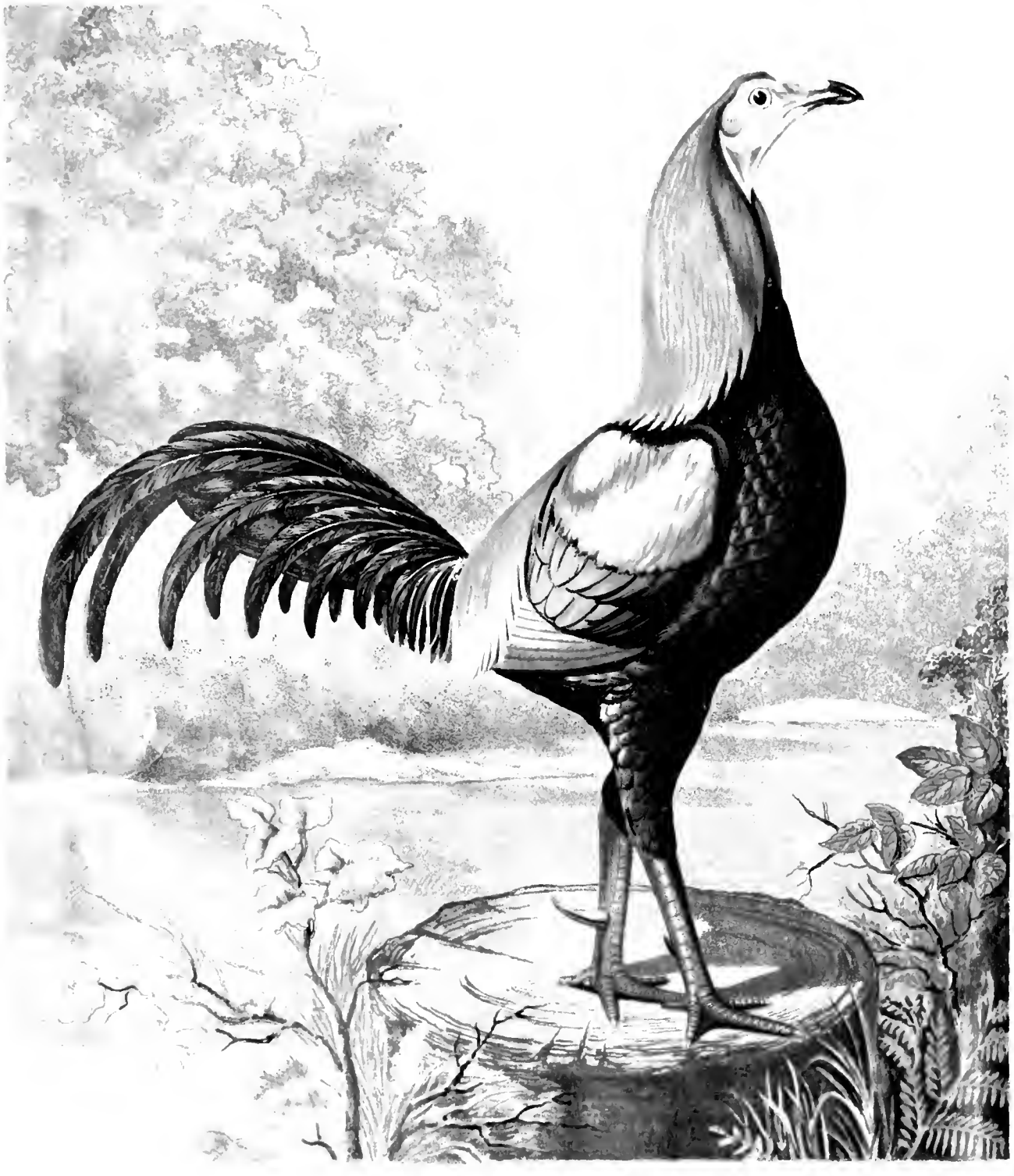

THE ILLUSTRATED

BOOK OF POULTRY.

WITH

PRACTICAL SCHEDULES FOR JUDGING,

CONSTRUCTED FROM ACTUAL ANALYSIS OF THE BEST MODERN DECISIONS.

BY

LEWIS WRIGHT,

Author of "The Practical Poultry Keeper," "The Brahma Fowl," &c. &c.

ILLUSTRATED WITH

FIFTY COLOURED PORTRAITS OF PRIZE BIRDS,

PAINTED FROM LIFE BY J. W. LUDLOW.

CASSELL, PETTER, & GALPIN,

LONDON, PARIS, AND NEW YORK.

4002.53

PREFACE.

For such a work as the present we do not feel that any apology can be either useful or necessary: it must necessarily stand or fall by its own merits, as an attempt at a thorough and practical exposition of Poultry and Poultry-keeping in their various branches. We may, however, state that it is the result, in great degree, of direct request from numerous fanciers. When, a few years since, we published a small treatise written from the practical or breeder's point of view, upon the particular variety of poultry which had become our own special craze in this line—the Brahma—any great demand for it appeared exceedingly doubtful. To our astonishment, however, both the first and a second edition were rapidly exhausted; and we received from all quarters strong requests for a similarly full treatment of other breeds and other branches of the subject, illustrated by really faithful Coloured Portraits of celebrated birds. It was in vain that we pointed out the difficulties of such a work; urged that we didn't know *everything*—quite, even about fowls; and that secrets of breeding and management were, as a rule, most jealously guarded. We were assured that the necessary information could be obtained; that "the fancy" had confidence in us and would help us; and more than one promised us that all they knew should be freely communicated, if we would only take charge of it. We could scarcely refuse under such circumstances, and this may be given as the history in brief of the present work.

So begun, and so carried on, it has been of course a labour of love. The work has been great; but it has been pleasant work, lovingly and heartily done, and shared in by nearly all those best known in the poultry world. Without their aid we could have done little; but every one has brought his stone to the building. Never has such a mass of information, contributed by the best authorities in the "fancy," been brought together; and birds which no money could purchase have been freely entrusted to us for portraiture. We had intended to have here recorded those to whom the public and ourselves are alike so much indebted, but we find the list is too long. To give only some would be unjust, and to give all would lose the very grace of such an acknowledgment amongst the mass of names; we prefer, therefore, to refer to the Index, or to our text itself, where it will be seen that for the substance of whole chapters we have merely acted as counsel examining not unwilling witnesses. We have had sometimes to *cross-examine;* to draw out further explanations on points not sufficiently treated of or left unmentioned—a knowing "poultry-man" takes it for

granted you know so much, when you know so little—but it is genuine pleasure to us to state that in no case did we find any reluctance to tell whatever we wanted to know. All concerned have done their very best, for pure love of the gentle craft we have followed together.

To two gentlemen, however, our obligations have been somewhat special, and therefore demand special acknowledgment. We have to thank Mr. Hewitt, not only for his numerous contributions on various breeds, but for his opinions and criticisms on many of those finer points of judging upon which he is such an authority, and which we have had personal means of knowing have been peculiarly valued by the breeders concerned. And to the artist, Mr. J. W. Ludlow, we must also render special thanks for the manner in which he has co-operated with us; striving to meet our wishes in every point, and in many cases even deliberately sacrificing mere pictorial "effect" in order to bring out the *points of the birds*, which he knew to be the object we chiefly desired.

We would only add, that in our Schedules for Judging we have endeavoured to meet a long-expressed want. The evils of merely empirical scales had been felt for years; but it required some self-denial on our own part to refrain from giving fresh descriptions and scales which presented in the same manner *our* views of fowls and judging as "standards" for others. We have, however, adopted the more modest plan of following those who *actually do judge* the bulk of our shows, noting their awards, and by slow degrees and by laborious analysis, demanding throughout a tedious mathematical investigation, reducing them to figures. The mode in which we have presented those figures may of course be questioned; on this point we can only repeat that we have deliberately chosen that which, after many trials and disappointments, *we* considered to be the best; and as we have been the first to attempt such a task, we alone perhaps fully know its difficulties. But that our scales—so far as any scales can—really do represent modern judging; that they will not lead amateurs astray, as previous scales have done, but offer sound and accurate guides for private study—of this we are assured; and since we have made such our sole object, with this we are satisfied.

And with this we lay down our pen, and—not sorry perhaps to have finished our work, very thankful at least to have been permitted to finish it—commend it, with whatever faults he may find in it, to the kindly consideration of the reader. We have done our *best* to please him, to instruct him, to help him—we can say and we could have done no more.

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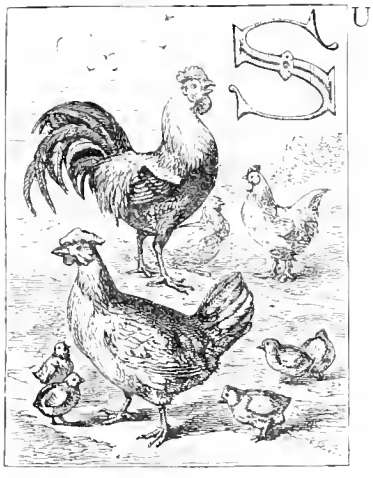
THE ILLUSTRATED BOOK OF POULTRY.

CHAPTER I.

HOUSES AND ACCOMMODATION.



SUCCESS in poultry-keeping must obviously depend very much upon the character of the premises the fowls are to inhabit; they cannot, any more than human beings, retain health and condition in unhealthy dwellings. In former years this was not understood, and consequently roup and gapes decimated many poultry-yards; now, neither disease is dreaded by the experienced fancier, and deaths from any natural cause are few and far between.

The essentials to the health and well-being of poultry—so far as accommodation is concerned—are very few and very simple; but it *is* essential to see that they really are provided, in proper proportion to the size and number of the birds. Pure air, and shelter from wind and weather, are all that is required, whether the establishment covers acres, or is confined to a few square feet. Pure air, of course, implies both proper cleanliness and proper ventilation; and good shelter implies a retreat dry under foot as well as above, which must also be open to the light, or the fowls will not resort to it. But unless the whole establishment be on a considerable scale, large and expensive houses are neither necessary nor desirable; and any amateur at all accustomed to the use of tools may do—as we and many others have done—the whole of the work of his fowl-house with his own hands. Indeed, we strongly advise this where possible; for it will not only benefit both the health and the pocket of the proprietor, but will give him a deep and lasting interest in the undertaking, which will of itself go a long way to command success. In the case of ladies, of course, such will rarely be possible, though we have known blooming damsels—well connected, too—who could perform incredible feats in this way. These it must be allowed were exceptions; but in all cases we would urge a thorough superintendence and knowledge of every detail in construction, as it may save much future trouble and cost should it be needful to direct alterations, or to contrive accommodation for strange fowls on sudden emergencies.

The house itself should, as a rule, be set apart exclusively for the inmates to roost and lay in, and should not be more than large *enough* to comfortably accommodate them. For a cock and five hens of the larger breeds, five or six feet square is ample for this purpose; for the smaller breeds,

four feet square will do; and much more will only increase the liability to cold and roup in winter, on account of the difficulty in maintaining a proper temperature. For, while ventilation is all-important, to secure it without either cold or draught is equally so; and much harm has been done by writers who have advised that cracks and chinks should be deliberately left all about the walls for the purpose of securing "pure air." For the air supplied there should be but one well-defined source—the hole by which the birds enter—and their perches must then be so arranged that they are out of the draught there will always be between this and the ventilator, which should be as high above the perch as possible. The ventilation may consist of anything except an unprotected aperture, which is bad. Louver boards answer well, but perhaps the simplest plan is to provide a sufficient hole in the wall, as near the roof as possible, and cover it with a piece of perforated zinc. The cost of this in England is generally sixpence per square foot; and it entirely prevents injurious draught, while providing ventilation perfectly. A window, however small, is also necessary.

In the numerous cases where only a few fowls are required to provide a family with eggs and an occasional chicken for table, some brick or stone building is frequently available, and if so,

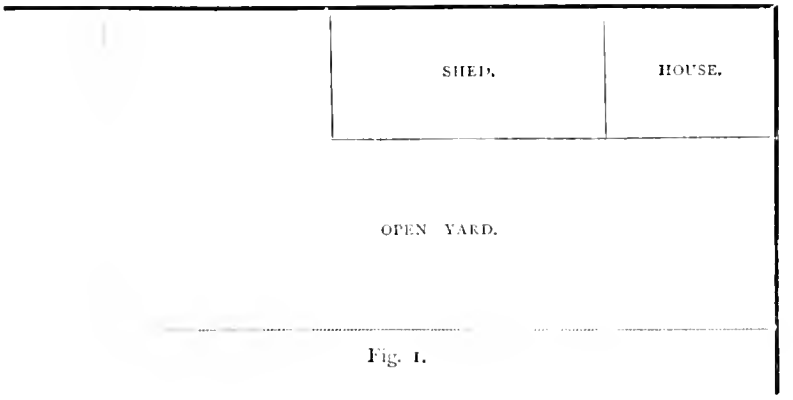


Fig. 1.

should be turned to account in preference to erecting a slighter one. If the house has to be built, by far the cheapest (and on the whole the best) material will be wood; and the simplest possible plan will be to erect a small square structure in any convenient corner—say five feet by six feet, extending the roof sideways to form an open shed, and either fencing in as much open yard as can be spared in addition (as in Fig. 1); or, provided the shed be large enough, and the *sun* can reach it during a good part of the day, wiring-in that alone. For a very few fowls the shed is not absolutely necessary, provided the house be so well lighted that the fowls resort to it readily in wet weather. If the amateur erects the house for himself, he should employ boards an inch thick, using scantling three by four inches for the frame; and, as planks are almost universally cut into twelve-feet lengths, the best size will be six feet high in front, and six feet from front to back, which will use it up without waste. The boards should either be tongued, which costs very little, or have a thin lath nailed over each junction to avoid draught from the cracks. The putting-up will be very simple. The two back uprights must be fastened to the wall with stay-nails or holdfasts, holes being first dug two feet in the ground for them. Another, but horizontal piece must also be fastened to the wall for the rafters to rest on, and the front uprights and door-post deeply sunk in the ground, truly perpendicular, and in line with each other. A second horizontal piece being spiked to these for the eaves, all is ready for spiking-down the rafters, which completes the frame ready for

nailing on the planks which form the walls. The roof may either be of wood, covered with felt, tiles (which are best and cheapest), slates, or corrugated iron. In case tiles are employed, no other ventilation will be necessary, unless the delicacy of the breed kept should necessitate boarding or lath-and-plaster work underneath them. Wood alone, without felt, will do very well for a roof if laid perpendicularly, a strip nailed over each joint, and well tarred; but laid horizontally we never found timber last very long.

Where a choice is possible, a south or south-east aspect should be secured for the house and yard. But this is not of so very much consequence with hardy breeds; and for years we have kept Brahmas most successfully in a range of houses fronting north-east, which is perhaps the worst aspect of all. If the house can be built at the back of or adjoining a stable, or behind a fireplace, it will have a most beneficial effect on the egg-basket in winter; but we do not approve of warming the house by a stove in any ordinary English climate. Some authors have laid great stress on this, but we are satisfied that the effect, as a rule, is far from beneficial. In the severe weather of northern Scotland, or in North America, the case is somewhat different; but where warming becomes necessary from the intense frost, the temperature should not be allowed to rise above forty or forty-five degrees Fahrenheit, or the birds will inevitably take cold in the day-time and probably perish. Even in situations where the cold is very severe, the necessity of artificial warmth may often be obviated by making the wooden walls double; *i.e.*, nailing planks on *both* sides of the uprights, with a few inches space between. This makes a very warm house; and it can be easily arranged that the fresh air admitted shall have to pass all round the apartment before it is finally allowed to penetrate into the interior.

For such a small house as we have been considering, all other arrangements will be very simple. Concrete, made with hydraulic lime, will make the best floor for the house itself, and, sprinkled with sand or earth, is easier kept clean than any other floor we know. We have often seen it condemned in poultry journals; but after an experience of many years we adhere to our own opinion, that a hard, smooth concrete floor, well sanded every time the house is cleaned, is at once the cleanest, dryest, and every way the best. The perch should be near the back wall, as near as will not damage the tail of the cock when at roost, but the height and size will vary according to the breed. For Cochins, Brahmas, Creves, or Dorkings, the perch should be a fir pole, five or six inches in diameter, sawn down the middle to make two if worth the saving, and not more than one foot from the ground. Other fowls can roost higher, and the perches may be smaller in proportion: but as a rule they are much too high and small; for it should be remembered that in a small building a fowl has no chance to fly fairly down for want of space, and often descends with injurious violence from a high roost. The nests should be on the ground, except for small varieties, and may go in any convenient position where the manure cannot drop into them. A couple of bricks placed so as to confine a little straw will make as good a nest as anything. The flooring of the shed should be either loose fine gravel, sand, or earth sifted so as to take out all the large stones. As in most cases where there is a fowl-house there will also be a garden, the last will usually be the best material. It should be turned over to the depth of eight or ten inches once a fortnight, and once every year entirely renewed, the earth removed making excellent manure for the garden.

Cleanliness in the house itself is very important. All the droppings should be taken away at least twice every week, which is easily done with a housemaid's dust-pan and small scraper, or a board may be laid under each perch, and scraped at due intervals. A daily cleansing is best of all. The *Canada Farmer*, some years ago, gave an excellent arrangement for promoting cleanliness, which can be readily understood from the diagram. A broad shelf (*a*) is fixed at the back of the

house, and the perch placed four or five inches above it, a foot or more from the wall. The nests are conveniently placed on the ground underneath, and need no top, whilst they are perfectly protected from defilement, and are also well shaded, to the great delight of the hen. The shelf is scraped clean every morning with the greatest ease and comfort, on account of its convenient height, and slightly sanded afterwards; whilst the floor of the house is never polluted at all by the roosting birds. For Cochins or Brahmas, the perch may be dispensed with, and the shelf or floor littered with straw, shaken up every night, and renewed weekly. This arrangement of house, allowing as it does of the nests being placed immediately under the perch, gives a greater amount of floor space than any other, and also keeps the fowls from all upward draughts of air; but daily attention becomes in this case absolutely necessary, to keep the shelf from becoming foul and infested with vermin.

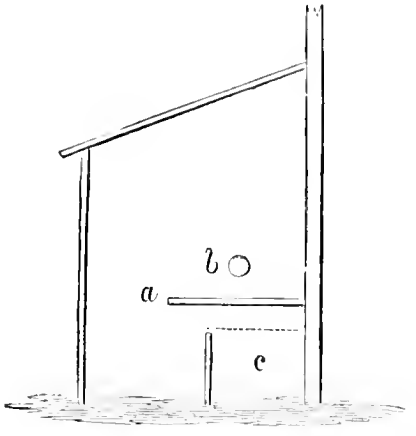


Fig. 2.

a Broad shelf, eighteen inches high.
b Perch, four inches above.
c Nests, open at top and in front.

For enclosing the poultry-run, the cheapest material is ordinary two-inch galvanised wire netting, a yard wide. This will cost in England, retail, about sixpence per square yard; in quantities it can be bought for less. It may be fastened to the supports either with broad-headed tacks, or preferably, and more durably, with small galvanised staples, which are sold for the purpose. For those who desire a more ornamental appearance, and no trouble in erecting supports, there are various poultry-fences manufactured, two of the most popular patterns being here represented. The cost of either of these will be about six shillings per yard, six feet

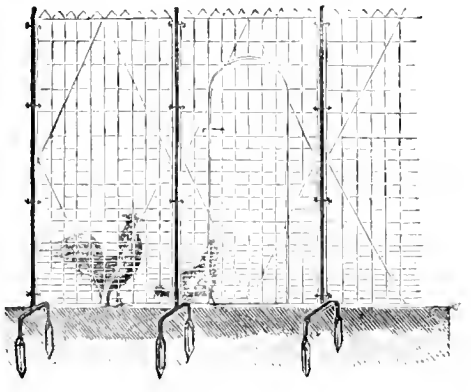


Fig. 3.

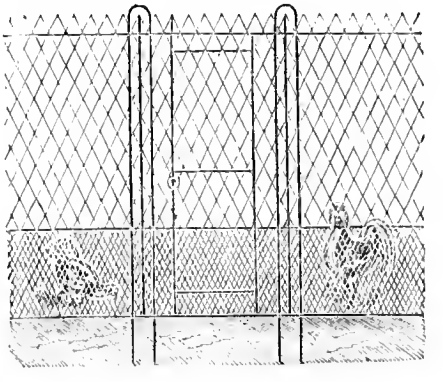


Fig. 4.

high; and, being very close at the bottom, they have the advantage of being proof against both chickens and rats. For Bantams and Hamburghs, this height is not sufficient, and the run will have to be either completely covered to confine them, or a ten-foot fence erected, unless the wings be cut. Brahmas and Cochins, on the contrary, will be easily confined within netting only three feet high, provided there be no top to the fence beyond the selvage of the netting. Quite sufficient support will be given to netting six feet high by posts one-and-a-half inches square, pointed at the ends, tarred, and driven two feet into the ground.

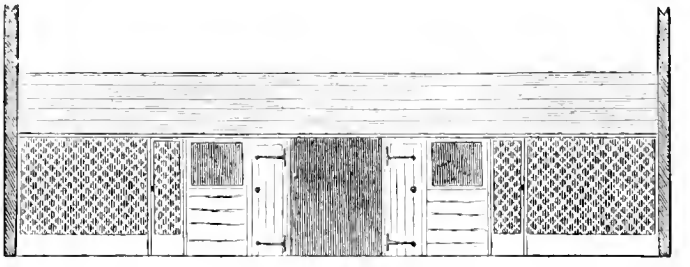
With regard to the minimum of space absolutely necessary to keep fowls in health, our experience has taught us that if the birds are of only moderate or small size, ten square feet of run for each bird may be made sufficient, adding half as much again for larger kinds. This is independent of the roosting-house, and supposes both the most scrupulous attention to cleanliness and a judicious diet. A shed so small will give least trouble if floored with clean fresh-water sand, as a rake with thin steel teeth, set a quarter-inch apart, will remove all offensive matter every morning, with the least possible labour. But if a grass-run can be given, it will be far better, giving higher condition with much less labour, as the shed floor will then only need turning over occasionally, and renewing once a year. For Spanish, or similar breeds, not quite one hundred square feet for each bird will be needed to preserve the grass: thus, a cock and four hens would require a grass-run of about twenty by twenty-five feet, which will remain pretty fresh and in capital order. Brahmas and Cochins require fully as much again, or the grass will soon become trodden and foul.

In any poultry-yard there are some essentials, attention to which is necessary to health and prosperity; and one of the first of these is that some retreat shall be perfectly dry under foot. This is especially to be secured in the early chicken-nursery, for if the young broods be put upon a flooring even a little damp, early in the year, it will be impossible to prevent cramp from making sad inroads even in the most hardy breeds. But in the shed for the adult fowls it is almost equally important. The grass-run may be a damp, cold clay, but if so, it is all the more essential that the shed to which the occupants resort in bad weather shall be *perfectly* dry; and in erecting a yard, money spent in securing this end will save many times the amount in future. Even if the natural soil be very bad as regards cold and damp, there is no difficulty in accomplishing the desired object. Perhaps the simplest and best method of doing so is that adopted by Mr. Tudman, in the chicken-nursery of the yard presently described. The ground is dug out to the depth of three feet, the space being filled in with brick-ends and stones, rammed pretty solid, and levelled on the top; and over this is put plenty of dry sand. In the case of a very bad, wet soil, the brick-ends should be raised nearly a foot in the sheds above the ground outside; and the thorough drainage, through the loose bricks, will keep the floor beautifully dry in the very worst weather. Instead of brick-ends or stones, large cinders, clinkers from an engine-furnace, pieces of shale, or anything of the kind, will answer the purpose, the only object being to provide interstices for the moisture to drain away. In such circumstances, dry sand or fine sandy gravel will make the best top stratum, but sifted earth or ashes will answer the purpose almost equally well. If preferred—and, for ourselves, we *should* prefer it—a layer of concrete, or strong hydraulic mortar, may be laid over the stones or bricks, which will prevent the sand or earth from being shaken down and filling up the crevices; and will also allow of the whole being periodically renewed with the least possible trouble.

Hen-lice or other vermin should, from the very first, be guarded against, or they will be a great annoyance to both the fowls and their owner. Stone or brick houses should be regularly washed every year with a strong lime-wash, in which sulphate of iron has been also mixed, a pound to every three gallons; put on, if possible, hot from the slaking, and thoroughly worked into every cranny and crevice in the walls. So important is this thorough searching of the walls, that if they be built very rough or uneven, it is well worth while to give them a little plastering over, to make the surface more even. In building wood houses, a brush dipped in kerosene or paraffine should be passed along the tongued edges of all the boards, as they are nailed in their places, the effects of which will last some time; but wooden

walls also should be regularly lime-washed, and if at any time vermin should get into them, they should be expelled by syringing all over, either with paraffine or a solution of carbolic acid. The last is certain death to nearly all insects, and is one of the most valuable additions to the resources of the poultry-keeper.

Supposing any variety of fancy poultry be kept to breed, or indeed, if any chickens be reared at all, at least two runs of some kind become necessary, and we can confidently recommend some



ELEVATION

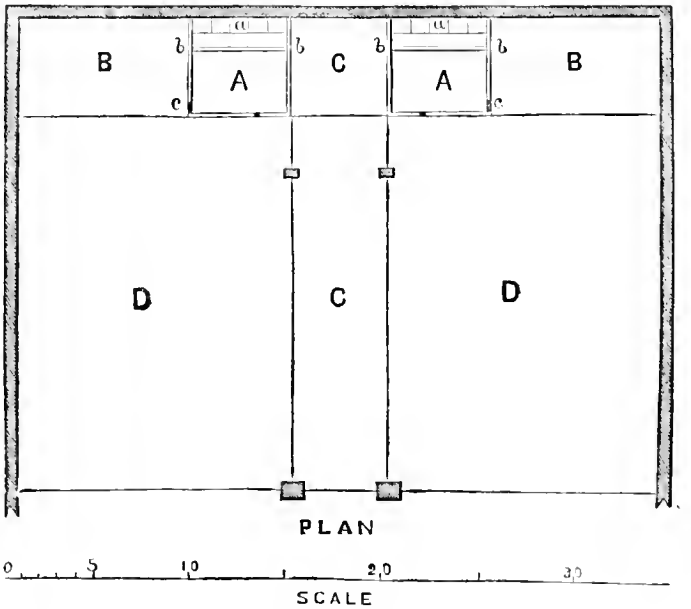


Fig. 5.

A A Roosting and Laying Houses.
B B Fenced-in Covered Runs.
C C Shed and Run for Sitting Hens.
D D Grass Runs.

a a Nests.
b b Perches.
c c Holes for Fowls to enter.

such plan as the following, which served ourselves for several years, until more extensive demand for our stock compelled enlargement. It is simple in plan, cheap, and most easily erected; and, if a good grass-run outside be also at command, is sufficient to rear any variety in great perfection, though not, of course, in large numbers. The yards in front may be left in the natural earth, but are better laid in sand or gravel, and raked clean every two days; if not, they must be dug over now and then to keep them sweet. The same design may be increased in size, if space permit. In the plan as here given, the sheds are entirely fenced in with wire netting, and boarded up a foot

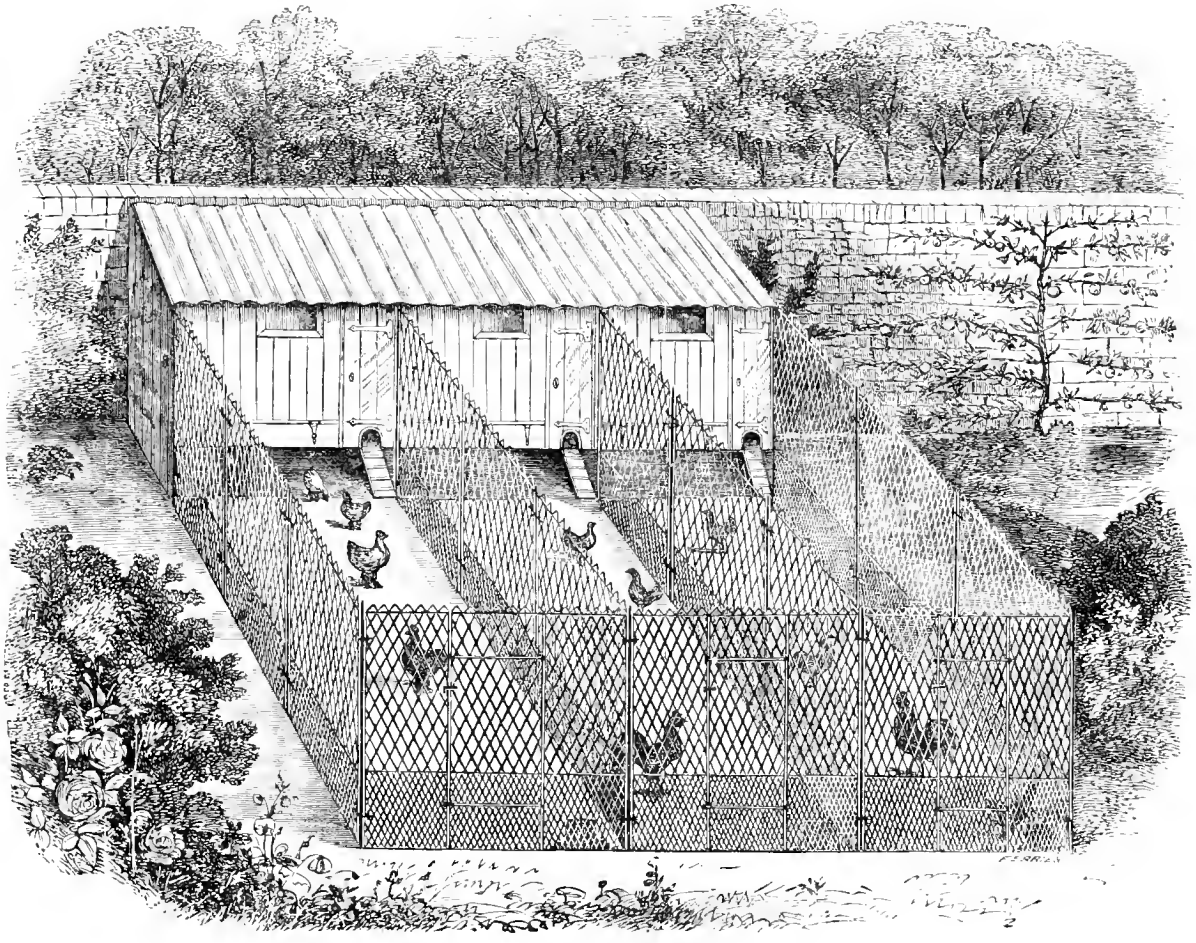
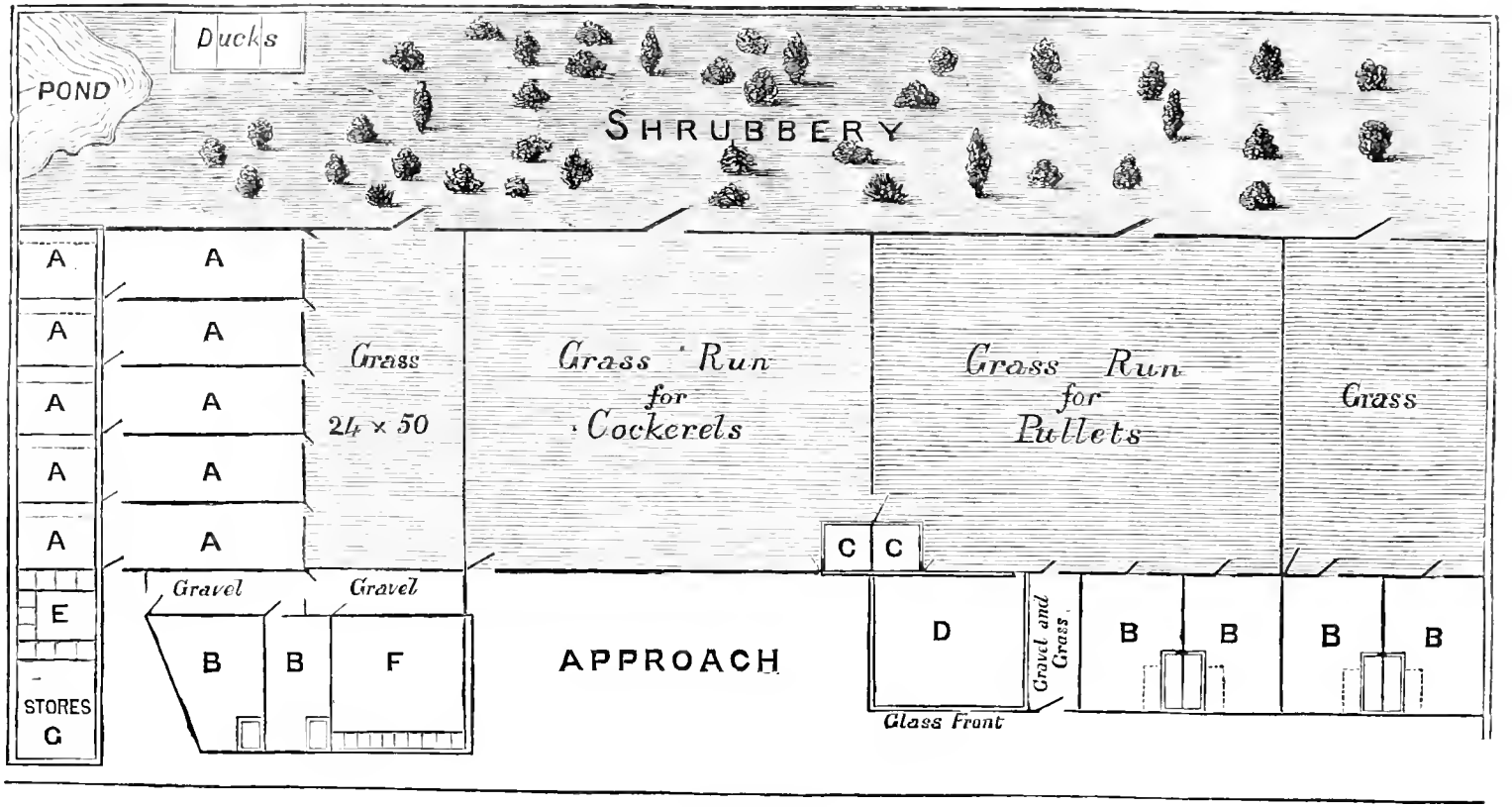


Fig. 6.

high, so that the fowls or chickens can be entirely confined during wet weather. But this is by no means necessary, and they may be left open, like that allotted to the sitting hen, with little injury. It saves trouble to have all the holes by which the fowls enter furnished with trap-doors, that the birds may be kept either out or in while cleaning or any other operation is going on. The small run between two others is a great advantage, as it not only accommodates a sitting hen, but will also prevent two cocks from fighting, without spoiling the appearance of a wire fence by boarding up between them.

On a somewhat similar plan are the ranges of iron-roofed poultry-houses and runs, manufactured by Messrs. Crook, and illustrated above. As represented in the view, each house and run is six feet wide, a space sufficient for some breeds, but which for others would need to be extended. The houses are raised from the ground about two feet, and the space under the floor thus forms a shed for bad weather, and economises room. It might be better if the floor were raised to the height of four feet, as the ground under could then be inspected and kept properly clean.

Where space is valuable, or materials expensive, the principle adopted in the above houses, of making floor space do double duty, may be carried out in other ways, as we saw during a recent visit to an old friend and fancier, Mr. John Stuart, of Helensburgh, N.B. We there found one



Scale 25 feet to 1 inch.

Fig. 7.

MR. E. TUDMAN'S YARD.

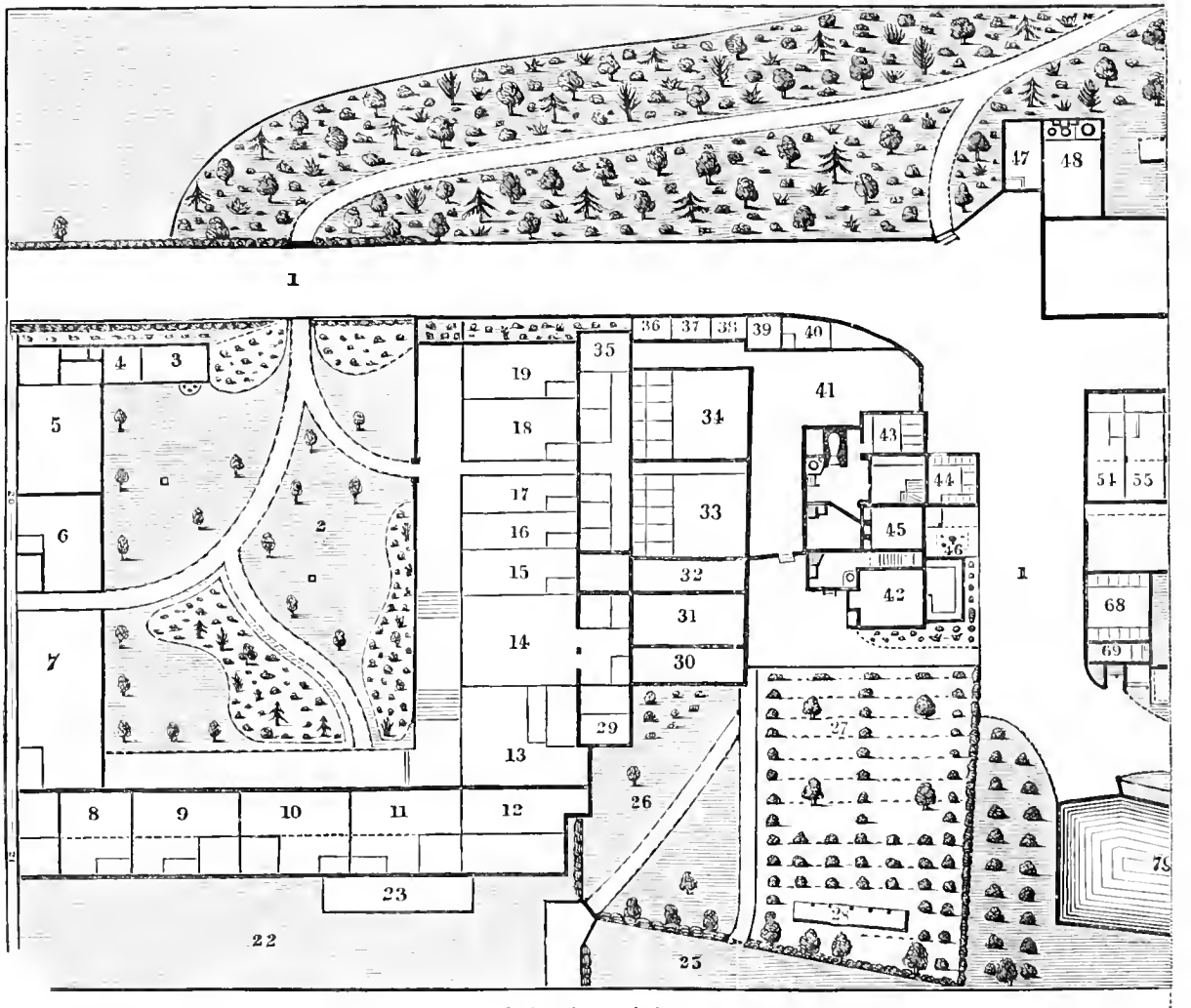
house between two sheds made to answer the purpose of two, by throwing a wooden floor across, about half-way up. The ground floor thus formed the house for the shed on one side, and the "first floor," reached by an inclined hen-ladder, did duty for the other, both being littered with straw. A hen-ladder, as is pretty generally known, is formed by nailing strips of wood an inch square across a plank a foot wide, at intervals of about three inches. The top corners of the strips should be taken off, or the feet may be injured by the sharp edges.

Still further accommodation will be required if great success in exhibiting be desired, and especially if there be any extensive demand for the proprietor's eggs and stock. In planning such, regard must necessarily be had to the shape and amount of space at disposal, especially if grass be at command. Scarcely any two yards are alike in these circumstances, and hence no one can probably be exactly copied by the reader; nevertheless, useful hints may be gathered from the plans adopted by others. Fig. 7 is a plan of the yard of E. Tudman, Esq. (so celebrated for his partridge Cochins), at Ashgrove, Whitchurch, Salop. A A are houses and yards for breeding-pens or other purposes, each house measuring ten by eleven feet, and containing a dusting-trough, thus answering the purpose of both house and shed; the yards in front being laid in gravel, and measuring thirty by ten feet. These runs have all access at pleasure to a grass-run, twenty-four by fifty feet. B B are smaller houses and runs, a portion of these also having access to a grass-run, twenty by fifty feet. C C are houses for cockerels and pullets respectively, each sex having a large grass-run to itself. D is a large chicken-house with a glass front, measuring twenty-two by nineteen feet, in which early broods can be reared, under the most favourable circumstances, in any weather. E is a house containing pens for feeding and preparing birds intended for exhibition. F is a house and pens devoted entirely to the sitting hens; and G is devoted to miscellanies and stores. All the grass-runs open behind into a shrubbery thirty feet deep, bounded by a brick wall, which can be used for any of the pens at pleasure, or, by the use of portable houses, be employed independent of them.

In this yard may be observed all the essentials for breeding and showing any single variety of poultry in the greatest perfection. There are pens of sufficient size to maintain the breeding stock in perfect health, with separate pens, and accessible grass-runs, for bringing any bird wanted for show into first-rate condition; the sitting hens are well accommodated, and a spacious chicken nursery prepares the young progeny for the ample range that awaits them when ready to be turned out. There is also ample accommodation for any moderate amount of surplus stock till it can be disposed of. This last is often overlooked by beginners, and if so is an occasion of serious loss; as cockerels must be either killed or provided for separately when the breeding-pens are mated for the ensuing year, and unless there is accommodation for them, birds must then be sacrificed which might otherwise realise considerable sums.

The most extensive and well-appointed poultry-yard in the United Kingdom, or, indeed, in the world, is unquestionably that of the Right Hon. Lady Gwydyr, at Stoke Park, Ipswich. The great extent of this magnificent establishment would have made it almost impossible to give even a tolerably accurate representation of it, however desirable; but the kindness of Lord Gwydyr, in placing at our service the results of a special survey, and a fully detailed scale-plan by Mr. Butterworth, has enabled us to give a correct plan of all the arrangements, which we are sure will be valued by many readers.

The nucleus of the Stoke Park establishment consisted of an extensive range of buildings adapted to the necessities of a home-farm, which placed at disposal an extent of wide and lofty shedding very rarely available for such purposes, but which has been greatly extended and modified as found necessary. The nursery (numbered 49) may be given as an instance, consisting

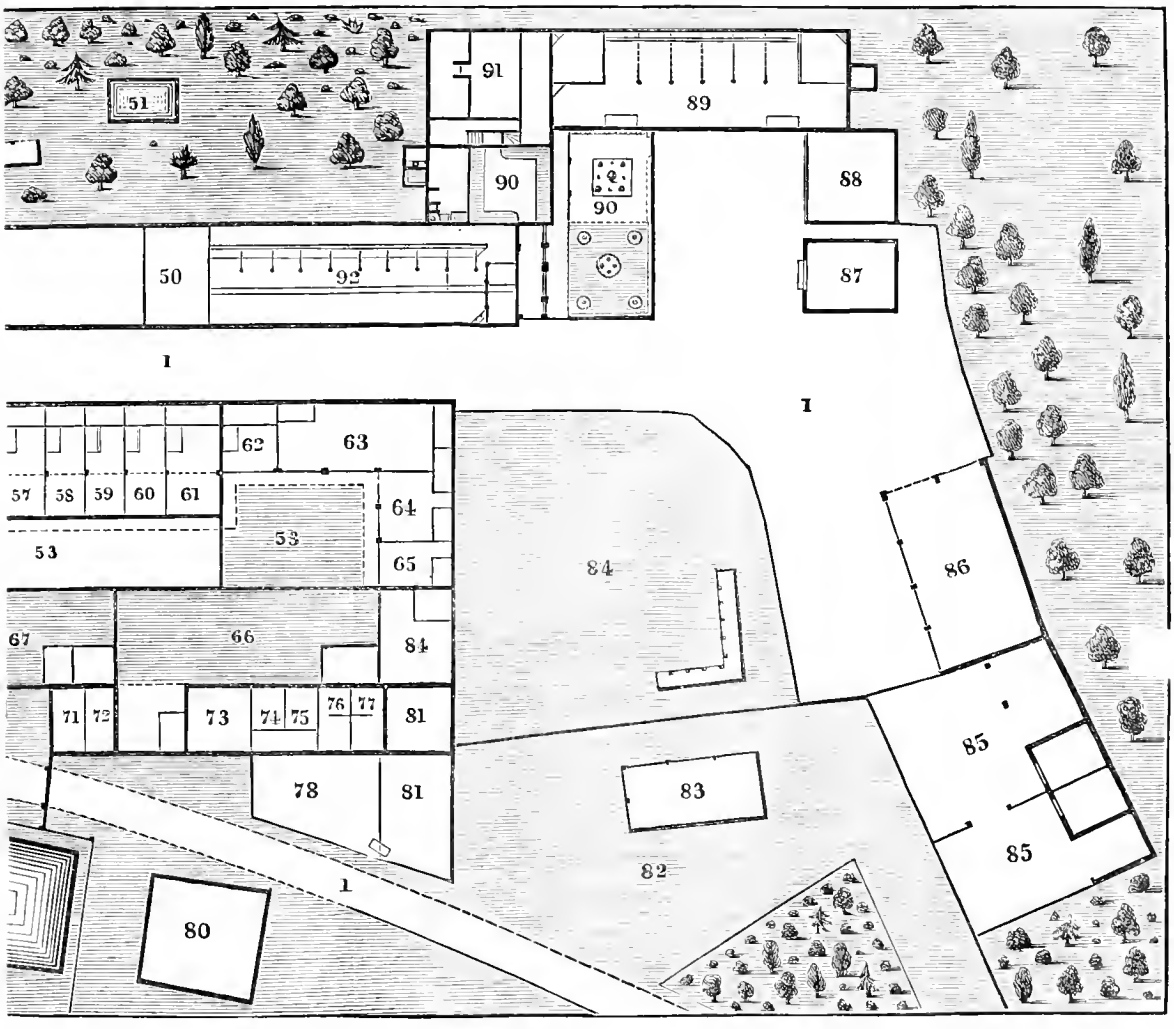


Scale 40 feet to 1 inch.

Fig. 8.

REFERENCES TO ABOVE PLAN.

No.	Description.
1.	Roadway.
2.	Garden and Poultry Yard.
3.	Dusting Bin.
4.	Dog Kennel.
5.	Poultry Pens, each with Roosting House, Open Shed, and Dusting Bin.
6.	
7.	
8.	
9.	
10.	
11.	
12.	
13.	Poultry Pens, each with Roosting House, Open Shed, and Dusting Bin.
14.	
15.	
16.	
17.	
18.	
19.	
20.	Poultry Meadows into which Pens open.
21.	
22.	Chicken Meadow.
23	Low Shed, with Glass Front.
25.	Chicken Run.
26.	Chicken Runs.
27.	
28.	Open Shed.
29.	Poultry Sheds.
30.	
31.	Open Yard.
32.	Hatching House.
33.	Yards, with Roosts and Covered Pens.
34.	
35.	Roosting House.
36.	Pens.
37.	Pens.
38.	
39.	Fatting House.
40.	Dog Kennel.
41.	Yard.
42.	Poultryman's House.
43.	Corn Chamber.
44.	Egg Room.
45.	Office, with separate Entrance.
46.	Garden.
47.	Store Room.



Scale 40 feet to 1 inch.

Fig. 9.

REFERENCES—*Continued.*

No.	Description.
.	Cooking House.
.	Chicken Nursery.
.	Roosting House.
.	Tank and Pump.
.	Low Open Shed.
.	Enclosed Yard.
}	Poultry Pens, each with Roosting House, Open Shed, and Dusting Bin.

No.	Description.
60.	Poultry Pens, each with Roosting House, Open Shed, and Dusting Bin.
61.	
62.	
63.	
64.	
65.	
66.	House and Sheds, with enclosed Yards.
67.	
68.	Exhibition Pen Room.
69.	W. C.
70.	Liquid Manure Tank.
71.	Duck Houses.

No.	Description.
72.	Duck Houses.
73.	
74.	
75.	
76.	
77.	
78.	Enclosed Yard.
79.	Pond.
80.	Muck Pit.
81.	Yard and Shed.
82.	Grass Yard.
83.	Low Open Shed.

No.	Description.
84.	Grass Yard, with Open Shed, and Roosting House.
85.	Yards, with Sheds and Houses.
86.	Cart Shed.
87.	Dovecote.
88.	Carriage House.
89.	Stables.
90.	Dairy, with Garden.
91.	Dairyman's Cottage.
92.	Cow House.

of a noble shed sixty-five by twenty feet, floored with clean dry sand, and entirely devoted, in the early part of the year, to the raising of the younger chickens; but the whole yard throughout offers the same ample accommodation, which is turned to the best account by her ladyship's well-known superintendent, Mr. Frederick Wragg, formerly poultry-manager to Mr. R. Boyle. No other yard offers, even in proportion, nearly the same amount of shedding for the shelter of the fowls, and the result is seen in the magnificent condition which Lady Gwydyr's birds always present at shows, and which tells wonderfully in competition. The buildings alone at Stoke Park extend over a space about five hundred feet in length by a hundred and fifty feet in width. The portion of the plan shown on the left-hand page, in Fig. 8, is called the No. 1, or "show" yard, being that to which Lady Gwydyr chiefly takes her visitors; and presents a very attractive appearance, honeysuckles and other climbers being trained over the front of many of the pens, and the grass-run which occupies the centre, and which is available for any of these pens, being decorated with ornamental shrubs, which also afford shelter to the fowls. The portion on the right Mr. Wragg considers more as his working yard, nearly all the young stock being confined to it; but of course many of the "crack" birds are often to be found in the No. 2 yard, while much "work" is also done in the more showy portion of the establishment.

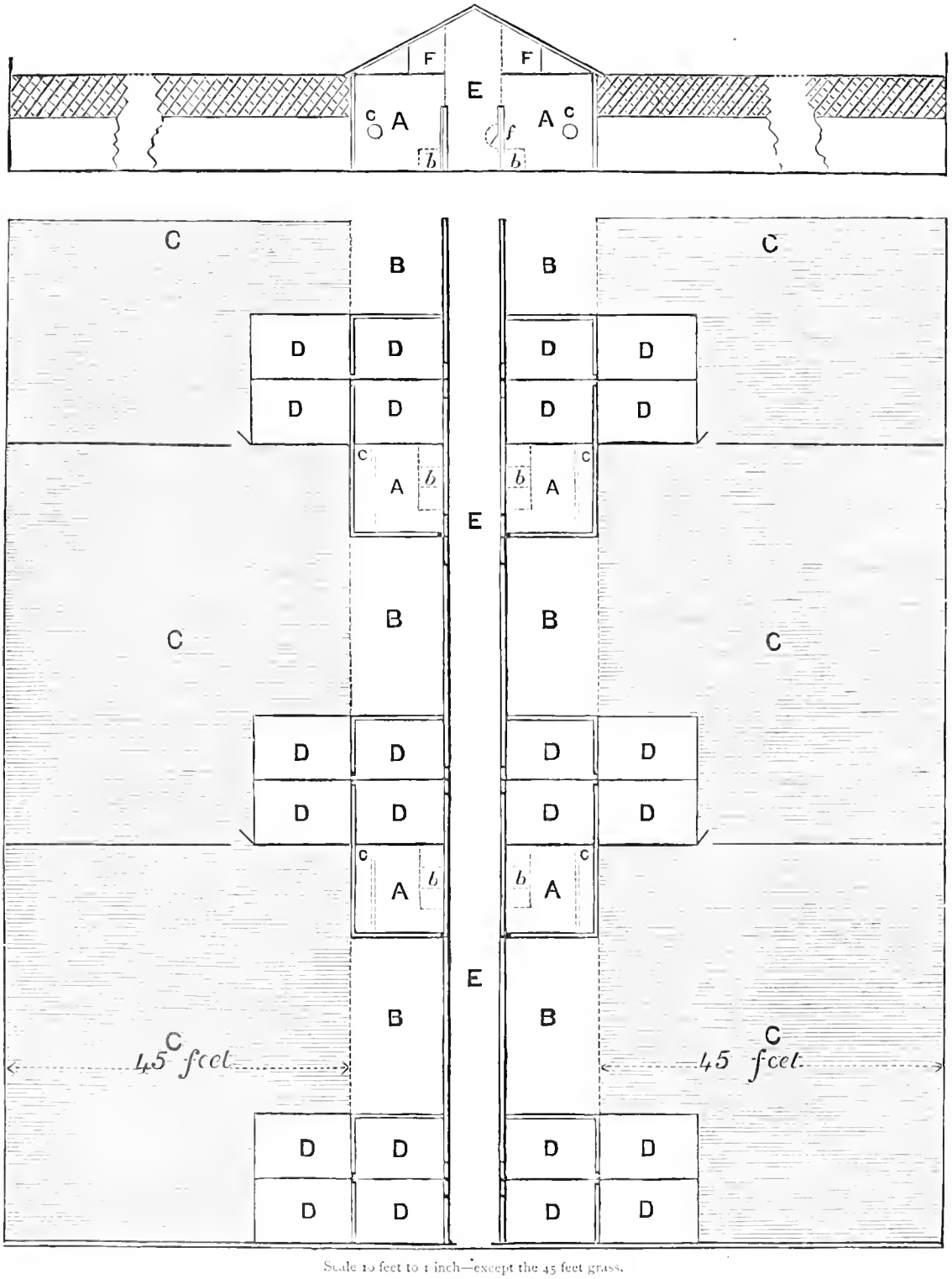
No description can add much information to the copious index appended to the plans, and our explanations will therefore be very few. It will be seen that the entire buildings present nearly *sixty separate pens* of various sizes, of which the smaller are perhaps as useful as the others, for accommodating single cocks, sick fowls, or other purposes. The No. 1 yard consists mainly of a range of pens, surrounding a grass-plot ninety by seventy feet. Some of these pens are very large, and those numbered 8 to 12 inclusive have fully half their area covered by shedding. Scarcely any of the sheds at Stoke Park, it may here be remarked, are wired-in, but are open to the front, which is doubtless the best plan when furnished on the ample scale here found. The roosts to the pens numbered 15 to 19 are entered from the passage at the back, which also gives access to the small covered pens shown at 33 and 34. Each of these measures about eight by four feet, and is devoted to a single cock, whilst moulting, or at any time needing separate accommodation. The small grass-plots in front of these pens give each bird, if needful, a little more exercise. Passing to the No. 2 yard, the noble chicken nursery at 49 has already been alluded to; adjoining are seen the store-room and cooking-house. Nos. 54 to 61 are nearly uniform pens, all shedded to the dotted line, or nearly two-thirds of their area, while 62 to 65, with the adjoining grass-plot, 53, are chiefly devoted to birds intended for show; and at the time of our visit the sole tenant was the best dark Brahma cockerel we ever remember to have seen up to that time (represented in another part of this book), and which afterwards won all the honours of the year. The opposite side of this yard consists chiefly of duck-houses; but the exhibition or pen-room will be noticed at 68. This is a room fifteen feet square, on two opposite sides of which are ranges of pens similar in size to those used at shows, the fronts beautifully made on the Birmingham model, of polished pine and wire. In these pens, as in Mr. Tudman's yard, the selected birds are put for several days, both to accustom them to the confinement of exhibition, and also to see if, when penned, their matching and appearance is satisfactory, or if better can be done with the specimens at command. This room, and all the sheds and yards, except those portions which are in grass, are floored to the depth of about eight inches with fine dry sand, which is regularly raked and kept perfectly clean. In the dwelling-house, a room (numbered 44) is entirely devoted to the storage of eggs from the various pens, and is decorated by a multitude of "prize cards," recording Lady Gwydyr's triumphs at the various shows.

Besides the formal pens, or yards, the meadows and shrubbery surrounding, and other out-door

contrivances, are pressed into the service. For rearing chickens, Mr. Wragg is very partial to low, open sheds, about three feet in height, such as are shown in plan at 52, 83, and 84; and what was originally a "cow-yard" and shed, at 85, at our visit accommodated as promising a lot of chickens, about five months old, as could be seen anywhere. Small wooden coops, or houses, are also employed to harbour the chickens; and, as a rule, Mr. Wragg endeavours to keep all his young stock outside the "yard" till pretty full grown. During all this time they have unlimited grass-run, and lay the foundation of a constitution which shall be proof against all ordinary circumstances.

In the establishment we have thus endeavoured to describe, it will be observed that the system of separate pens for accommodating surplus birds, which we have spoken of as so necessary in a "fancier's" yard, is carried to a very great extent; but the same object may be attained in very various ways, and as an example of quite different management, we may refer to the establishment of Mr. Henry Beldon, at Goitstock, Bingley, Yorkshire. This gentleman is, perhaps, the most extensive breeder and exhibitor in England; but has a great part of his stock reared at so much per head by the cottagers round, bringing them in as they are wanted for exhibition or sale. The breeding birds are sheltered in small detached houses in different parts, each lot having ample grass-run, the whole extent being about fifteen acres. Of course, a tolerable number of chickens are also reared at home, and so far all is plain; but the visitor looks in vain for the numerous pens he expects to find, each containing one of the handsome Hamburgh or Polish cocks for which Mr. Beldon has so enviable a reputation, and which he knows are about the place *somewhere*. But where *are* they? The truth is, Mr. Beldon has, undoubtedly, "the largest poultry-house" in England, in the shape of an old disused factory or mill, which shows no sign whatever outside of the novel use to which it is now devoted. This immense building measures about one hundred and twenty by thirty feet in plan, and consists of four floors, all of which are occupied by fowls, some of them being kept there, entirely under cover, for months together, excepting what time they may spend at various shows. One floor only is wood, but even this is kept in perfect health by cleanliness and sanding, and occasionally moving the birds to parts which have been unoccupied. Two floors are devoted entirely to rows of pens about ten feet square, down each side of the building, each pen having a window, and a wide passage being left down the centre between. The other floors are left more open, but also accommodate many birds; and in this novel manner Mr. Beldon has for years effectually secured the object we have been considering. Of course, chickens could not be reared in health under such circumstances; but when brought up out of doors, and fully matured, Mr. Beldon finds no difficulty in keeping them in good condition, and the whitest plumage never becomes tanned by the sun. No precisely similar circumstances are likely to occur in any other case; but the large building taken advantage of in this ingenious manner may perhaps furnish useful hints to many an amateur.

Lastly, supposing an entirely new yard is to be erected, of great extent, and that the space is ample and unencumbered by large trees or other hindrances, some such plan as shown on the following page (Fig. 10) may be adopted with great advantage in many ways. It is eminently adapted for either breeding and rearing fancy fowls, or for producing eggs and poultry in large quantities for market. The plan provides for each pen its own permanent grass-run, which is here represented as forty-five by twenty feet, for a Cochin cock and four hens; but for Spanish, or similar breeds, eighteen by thirty-five feet would be sufficient. The pens for single birds may be added or omitted at discretion, the essentials of the plan being the covered passage between the rows of houses, which gives both shelter and the least possible amount of labour in attending to a large number of fowls. If the small pens be many, as the sheds will be longer and grass-runs wider, the length of the grass-plots may be reduced in proportion. Next



Scale 10 feet to 1 inch—except the 45 feet grass.

Fig. 10.

A A Houses for Roosting and Laying.
b b Nests.
c c Perches.
B B Sheds for Shelter.
C C Grass Runs.
D D Small Houses and Open Pens for Single Birds or Sitters.
E E Passage, preferably sky-lighted.
f Flap to reach Nests from Passage.
F F Pens for Fattening Birds.

the passage, the houses for roosting and the sheds should be boarded up about three feet, and the rest wired to the top, when the birds will be readily seen at roost; and hinged flaps should also give means of access to the nests without entering the houses, though doors will, of course, be provided. The passage should be sky-lighted, though this is not absolutely needful, as light will come in over the low shed walls. At the outside, next the grass, the house will of course be boarded close up, and also at the sides, but the sheds may be left quite open, the three-feet boarding at the back giving shelter enough from the draught. The depth of the shedding from front to back is given as six feet, but may be increased with advantage; or the front of the sheds may be boarded up for half their length, to give more shelter in very windy weather. And lastly, for an establishment intended to continue any time, apple, filbert, or other crop-bearing trees, should be planted in each run, to give both shade and shelter to the fowls.

Such a yard, multiplied to the extent desired, and with as many of the small pens, D D, as may be necessary, will rear prize poultry to great perfection; but besides a store-room, a certain length of the shed or some other covered building will be needed, to form an apartment where birds can be put up for exhibition, to clean themselves among dry straw. If a few exhibition pens can be found room for, as in Mr. Tudman's and Lady Gwydyr's yards, it will be a great advantage, and nothing more will be really required. One of the sheds, boarded up outside, and wired down to the bottom within, will make a capital chicken nursery for bad weather, and the birds will grow *better*, if put about fifteen together in runs of this moderate size, than if they have unlimited range, always providing they have the shade of trees in summer. The fences between the runs should be boarded up about two-and-a-half feet, and wired above to any height required.

Were we erecting a wholesale poultry establishment, we would take the same general plan, but making the runs and houses larger, so as to accommodate from twenty to thirty fowls for laying; the breeding-pens should be as before. As the height of the roof will be greater in the passage than outside, pens for fatting birds intended to kill may be advantageously located at the top, as shown at F. These should have open bottoms made of bars, two inches square, but with sliding floors or drawers under, to prevent any of the droppings falling into the houses beneath. In a very large concern, a railway should run along the passage, to carry trucks for the food, water, and manure. Doors will of course be placed from the passage into every house and shed, and also between run and run, so that entrance may be had from one part to any other by the shortest way. The holes by which the fowls enter the houses from the sheds should be next the passage, so as to keep all the draught on that side; and as the nests will be the same, the perches will of course be placed as represented. In severe climates, the best plan would be to have the whole passage sky-lighted, and board up the entire sheds outside, next the grass-runs, as well as the houses, only leaving a trap for the birds to enter. Should artificial heat be wanted during any time of intense frost, such would be readily supplied in an establishment of this kind by having a double row of hot-water pipes the whole length of the passage, which would supply a temperature genial, but not injuriously warm. In fact, wherever the ground permits it, and the whole has to be specially erected, some such a plan as here given will give the greatest amount of shelter and accommodation, at the least possible cost of material, and will also allow of the most thorough supervision, for the least expenditure in time and labour; while it is equally adapted to six pens or sixty—to fancy poultry, or to a concern for rearing table-produce only.

Perches we have already spoken of, and it is only needful to add that, for many reasons,

they should be fixed so as to be instantly removed when required, for cleaning the house. The simplest plan is to fix small wooden ledges to the walls, on which the ends may rest; and these places must be specially looked after in searching for insect pests. Cochins and Brahmas, as a rule, do better without perches, upon soft straw. This should be allowed pretty freely, and, if shaken up every day with a fork, so that the droppings may fall to the bottom, will last a week, when the whole must be removed and clean straw substituted. Some few breeders still employ barred floors for Cochins, which formerly were very general, but are now little used. These are made of bars two inches square, placed about one-and-a-half inches apart, and are, or should be, fixed about six inches from the ground. As, however, all the droppings do not always fall through, these floors are very apt to damage the plumage of the breast, besides occasionally causing tender feet; and we should advise either perches or straw in preference.

In erecting any range of buildings for poultry, it will save much, both in time and money, if *all* the details are so planned as to cut up the standard lengths of timber without waste. The most usual length is twelve feet, but sixteen feet is not uncommon, and occasionally twenty-four feet may be had in quartering (two by three inches) or scantling (four by three inches). The latter will be the proper size for the main uprights, while quartering will do well for door-posts and to support the partitions. But as short wood is generally cheaper than full lengths, if the width of a shed be six feet, for instance, it will save both money and the labour of sawing if all the boards for the cross partitions be ordered from the yard in six-feet lengths, when they are ready for nailing on without any preparation or loss of time. If the width of shed be eight feet, a board will still cut without waste, as the tonguing will keep two four-feet lengths in place between the long ones. Much money is often literally thrown away for want of considering these simple matters.

In describing our "model" plan, we have already hinted that doors should be liberally provided. One door into a run may be all that is absolutely necessary; but if made all to one pattern, doors cost scarcely any more than fence, and it saves much time and temper in attending to a large stock of poultry, to be able to get about in every possible way, without having to go a long way round. And, let the doors be *wide* ones. In our earlier years we suffered much inconvenience from having made many only two feet wide. As a rule, of course, chickens will be reared in the place devoted to their use, but many occasions may arise for taking a coop, or a large exhibition basket, or other matters, into *any* pen; and it is most vexatious to find the door will not allow your burden to pass through.

The allowance of grass-run we have given is such as we know to be sufficient to keep both it and the stock in good condition, but it will conduce greatly to success if now and then each pen can have a month or two's rest. In such a uniform plan as we have last described this might easily be effected by devoting all the runs, in regular rotation, to chicken-rearing, when those which are used any given year will be left for a certain time unoccupied; other pens getting their rest or fallow next year, and so on. By adopting such a system, somewhat smaller pens might be made to do; but it is well to say, decidedly, that *small* grass-runs do not answer, and unless proper space can be given, the yards must be laid in sand or gravel, and the green food supplied artificially. We have known a contrary plan tried repeatedly, but it has always failed; and the only real use of a very small grass-plot is either to *cut* grass from for the fowls' use, or to accommodate a few favourite birds for a few weeks only, whilst preparing for show.

Prize poultry may however be kept, and exhibited most successfully, without any regular "yard" at all, if ample space be at command. No one ever had more unvarying success at

shows than the Viscountess Holmesdale, whose Dorkings, so long as she exhibited, rarely failed to carry all before them; but scarcely any of her birds were ever penned in a yard. The whole stock, in fact, enjoyed as nearly perfect liberty as possible in Linton Park, each family or colony having to itself a portable wooden house, mounted on small wheels, which was moved a little every two or three days. Placed at wide distances apart, and hid from each other by abundant timber, the different families never mixed; and, each house having an *open* window, the birds always breathed the pure air of heaven. Spanish were treated in the same way, and in fact many of the fowls even roosted in the trees. The remarkable fact was, that both breeds became in a great degree *hardy* under this natural treatment; and where Nature can be thus *fully* followed, there is no doubt that freedom from wet and draught needs not to be so studied as we have insisted upon. We would, indeed, prefer such a plan to any other; but it must be followed *entirely*, or it will fail. Keep fowls at *perfect* liberty, with unlimited grass and good shelter among noble trees, and they will thrive with very little housing; but if confined in even such grass-runs as we have described, they will need the protection we have there insisted on.

It often happens that one large grass-run, perhaps fifty feet square, can be provided in the centre of a number of small gravelled pens. In this case perfect health may be secured, and the necessity for giving artificial green food avoided, by letting each lot of fowls out in succession, even for one hour each day. In such circumstances, the most will be made of the grass in this manner; but unless the most exquisite cleanliness be observed in the yards, and especially in the sheds, it will not give that exquisite bloom which constant running on grass will alone impart. For mere health a grass-run is not in the least necessary. We have done without it for six years, and not only obtained abundance of eggs, but reared pullets which celebrated exhibitors have been glad to purchase at twenty guineas per pair, though the birds had never seen a natural blade of grass in their lives. But the proper management of poultry, under these varying circumstances, must be the subject of succeeding chapters. It demands both more time and care; and a good supply of fine natural turf does more for the health and well-doing of poultry, and saves more time and trouble in their management, than any other single condition which can be named.

CHAPTER II.

THE SELECTION OF STOCK.

MANY persons who have every requisite for success, fail to keep poultry profitably, because their stock is not adapted to their circumstances, or to the purpose intended. Were all fowls alike in their characteristics, this of course could not occur; but the very fact that so many breeds have been developed and perpetuated by the art of man, differing in every conceivable quality, as well as in every point of mere appearance, itself proves the necessity of considering somewhat the special requirements, before the fowls are chosen which are to supply them.

There is a very popular error, to the effect that mongrels, or "common fowls," will surpass any pure breeds as regards *useful* qualities. The idea doubtless grew out of the ludicrous excesses of the "poultry mania," and has been perpetuated since. People spent large sums for Cochins, under the idea that they would lay two or three eggs every day; and finding they did not, felt both injured and disappointed, and gave up the whole business in such disgust that for some time it was almost dangerous even to a man's character to be thought a poultry-fancier. This is changed now, but to a great extent the impression as to the uselessness of "fancy fowls" still remains, and has done much to hinder success in poultry-keeping. For, *whatever* point be desired in a stock fowl, it is to be considered that there is some one at least of the several varieties in which that point has been specially and eminently developed, to a far greater degree than can be found in any barn-door or common birds. It matters not whether the desired feature be in the shape of constant laying, larger size, fine quality of meat, early maturity for the market, hardihood, or anything else; there is, at least, some one fowl in which that quality is the leading characteristic, and which is therefore the best for the purpose desired.

When expense is an object, very valuable results are often obtained by putting a cock of a good breed to fine mongrel hens. There is very little doubt that the coloured Dorking was first produced in this way, by putting the white Dorking cock to those large coloured hens which Surrey and Sussex have always produced, and thus adding a better quality of meat and greater tendency to fatten to the larger-framed birds. And, similarly, a tolerably good Dorking cock, mated with any fine large-framed hens, will always produce much improvement in the table qualities and early maturity of the chickens; whilst a Spanish or Minorca cock will generally increase considerably the number of eggs from his progeny. But when only one lot of fowls can be kept, the proper advantages to be derived from judicious first crosses can hardly be secured; and we are convinced, from long and varied experience, that good and pure varieties will, in the end, prove better than mongrels. None of these lay so well as certain pure breeds; none grow so large; none are so hardy or such good eating; hence, none are so likely to answer the purpose of even the purely commercial poultry-keeper.

The chief breeds of poultry may, for economic purposes, be classified as follows, the order of naming representing as nearly as possible their average comparative value, though this will vary somewhat according to different circumstances. As layers:—Hamburghs, Minorcas

or Andalusians, Houdans, Brahmas, Leghorns, Spanish, Polish, Dominiques, Game, Cochins, La Flèche. For quality of meat :—Game, La Flèche, Dorkings, Crèvecœurs, Houdans, Polish, Brahmas, Dominiques. For size and weight :—Brahmas, Cochins, Dorkings, Crèvecœurs, La Flèche, Malays. For hardiness :—Houdans, Brahmas, Dominiques, Cochins, Minorcas and Andalusians, Leghorns, Game. As sitters and mothers :—Dorkings, Game, Dumpies, Silkies, Dominiques, Brahmas, Cochins. We might perhaps add that for combination of useful qualities generally we would name Brahmas, Houdans, and Dominiques, as most worthy of attention.

Supposing only a single house and shed, or run, to be at the disposal of the fowls, it will be far better not to attempt to rear any chickens at all, but to purchase, every autumn, such young birds as may be required. Chickens *can* be reared, with care, in almost any conceivable circumstances; but in those we are considering, the time and trouble involved would far outweigh the return. Non-sitting breeds, therefore, must be selected; and either the Houdan, some one of the Spanish breeds, Polish, or the American Leghorn, will bear the confinement well, and yield a good supply of eggs. Hamburghs rarely do so well penned up; but in some cases, where the shed is large and roomy, and scrupulous cleanliness has been observed, they have yielded very good results. Supposing there to be a fair-sized open yard or run besides, with the aid of a feeding-coop, chickens might be reared to a limited extent; and if this be thought at all desirable, the most lucrative breed in ordinary circumstances will be the Dominique; Houdans being inadmissible for want of sitters, and Brahmas, on the contrary, sitting too often for the limited space.

Perhaps rather more space can be given to the fowls, so that the breeding and laying stock can be divided into two or more runs, and a spare run devoted to chickens. In that case we are convinced, from long experience, that the most profitable single breed will be the Brahma, and that if two breeds be chosen, they should be the Brahma and Houdan. With these two breeds, properly managed, we are persuaded that greater returns can be obtained than from any other combination. We would never, in a limited space, choose the Dorking; and are sure that a great part of the failures in poultry-keeping arise from the common belief in the superiority of that fowl, leading to its being adopted in circumstances not at all adapted to it. A bad layer, and very difficult to rear, it will never pay as a mere family provider; and heavy losses will diminish what little return there might otherwise be.

On the contrary, where dead poultry for the market is the main object, the Dorking is invaluable. It fattens "naturally" and grows early, while no fowl presents a more satisfactory appearance on the table. No other fowl will realise such high prices in the London market; and the well-known five claws are always a passport to the good opinion of the poulterer. But even when good markets and a demand for chickens make it desirable, this breed should not be attempted unless the situation be dry and sheltered; if otherwise, the Houdan or Dominique should be substituted, or a Dorking cock crossed with Brahma hens. The largest birds ever known have been reared from this last cross, which can scarcely be distinguished on the table from pure Dorking.

For the general run of a farm, Brahmas, Dominiques, or Houdans will still yield the best return: Brahmas where many chickens are required, Dominiques when only a few are wished for, and Houdans where eggs alone are the end in view. The American Dominique we regard as a generally most useful fowl, which only requires to be better known to be highly valued. It has the general appearance and the edible qualities of the "cuckoo" Dorking, but differs from it in having yellow legs and a far hardier constitution, besides being an infinitely better

layer. From the preference shown by many poultry-maids and others to "cuckoo," or blue-speckled hens, the Dominique will in many districts pave the way more easily than other pure breeds to an increased cultivation of fowls as a source of wealth, and is the very fowl for national use, where more fancy varieties will not be tolerated, or cannot be obtained. Sober and unobtrusive in its garb, it nevertheless always looks "respectable" and well; and its plain, homespun suit is the very thing for a roadside cottage home and the wear and tear of every-day life.

For the gentleman's country house the choice will, probably, be different again. With a spacious paddock or orchard in which to range, the Silver-spangled or Pencilled Hamburgh will sustain its claim to be an unrivalled producer of delicate white eggs; or if rather larger ones be desired, the Black variety will answer the call; while any of the Hamburghs, in their matchless outlines, offer the very ideal of beauty in fowls. In such circumstances, also, the royal Game-fowl is an unrivalled layer, while it will always provide a pair of birds for the table when required, which surpass any other in flavour, and are often equal to the pheasant if not overfed. Or, if the owner prefer the gigantic Asiatics, in such happy circumstances the Brahma will borrow an added grace and a new lustre, and thrive and pay better than ever; or the white Cochin will set off its pure and dazzling plumage by contrast with the grass; or the delicate-looking Buff will appear at its very best while walking over the living green. Any of these will both pay for their keep and add to the attractions of the noblest country home.

We have now mentioned the varieties which, as a rule, will yield the best return in the various circumstances referred to; but it very often happens that some strong individual fancy of the proprietor will carry him altogether away from the choice we have made for him, to make a choice of his own. The result in such cases will usually depend upon the character of the management. If the owner simply buys the fowls, and then leaves them to the care of his domestics, the result cannot be satisfactory; but if he has made his choice from real love of it, and having got his birds, proceeds himself to care for and study them, it may be very good: for it has been proved again and again that almost any fowl *can* be kept, and made to pay, in almost any circumstances, even the most unfavourable. In the days of the "poultry-mania," first-class Cochins have been reared in a spare room, and Spanish have been kept in splendid condition on the flat roof of a house. A real love for the pursuit, in fact, will overcome the disadvantages of almost any breed for the place in which it is to be kept. We should say, therefore, that where there is really a strong fancy for some particular fowl, it was best to gratify it;—to go into the matter *con amore*, and make the best of it. It is always better to keep a breed you really care for than one you do not; and if the feeling be genuine, and accompanied by ordinary intelligence, it will usually overcome all difficulties, and lead to a profitable result in the end.

But of still more importance than a wise selection of breeds is the proper *age* of the birds themselves. Considered merely as a producer of stock, no hen should be allowed to see more than her third autumn. With valuable fowls the case is of course different, as apart even from prize-winning, a dozen fertile eggs from a proved first-class bird may be well worth the keep of a year; but as regards the mere production of *eatable* product, the rule must be rigidly enforced of *killing every hen at the age of two-and-a-half years, at the first symptom of moult.* In very many breeds, Brahmas particularly, the second season's eggs are more numerous than the first, but after that all fowls show a great falling off, whilst they also become too tough to be eaten. On the other hand, by killing at the age stated, they may be either eaten or sold at a fair price, while the best part of their lives only is any expense to the corn-bin.

No rule is so *imperative* to profitable poultry-keeping, and none is so constantly neglected by all except the skilled breeders, who know it too well ever to neglect it. We have repeatedly been shown hens of very uncertain age, except that they were certainly *over* seven years, running in a narrow but ornamental gaol at the bottom of a garden; and their fair owners wondered they did not lay! Their laying was *done*, except for a stray egg once a month or so, just to keep up the sweet memories of the past, and awaken hopes never to be realised. For fowls to be profitable, they *must* be regularly killed at moulting time, when two-and-a-half years old. Of course, if they are pets it is hard to kill them, and the female members of the family especially will protest. That is another matter. A hen may be kept to be petted just as lawfully as a canary; but the object then in view should be borne in mind, and nothing more in the shape of profit expected from one than from the other.

Not less important is the time of year at which the birds were hatched. It has been often repeated in various works on poultry that a pullet, in whatever circumstances, *must* begin to lay at a given age; but this we have found, by special and systematic experiments, is by no means the case, a difference of months being caused by the time of hatching. If the age of five months finds a pullet belonging to one of the more prolific breeds in the midst of warm weather—say August—eggs may be expected about that time; indeed, great care is needed if it is desired to *prevent* laying at such seasons. But birds hatched in May will complete their sixth month in October; and in very few cases will eggs be procured before Christmas, if even then, unless the feeding be unusually good. Still later hatched—let us suppose late in May or early in June—it will be as late as next spring before most of the pullets are producing eggs, and ere this occurs many of them will be at least nine months old. The effect of mismanagement in the date of hatching upon the profit and loss account is hence readily seen. Supposing that the fair average time for a pullet to commence laying is at the age of six months, and that the cost of her food be (as in large breeds it is) about three halfpence per week, a late May pullet must be fed three months longer, at an *additional* outlay of one shilling and sixpence, before she yields any return. No fowl (we speak now of mere ordinary or market stock, not of "fancy" values) can be expected to recover such a cost; and it is in this way that about half the failures in poultry-keeping are caused. Ordinary fowls become broody oftener in May than any other month, and the bright warm days tempt the proprietor to choose that time for hatching the chickens. The latter do well indeed—they enjoy themselves, and thrive, and grow; but they will not *pay*—whereas chickens hatched from the middle to the end of March, or early in April, will require more attention certainly, and call for much self-denial occasionally, in the shape of braving bad weather to see they are duly cared for; but will often, if in reach of a town market, repay the whole of their cost even before New Year.

Nearly all fowls, however mismanaged, and if not too old, will, so long as they are in tolerable health, lay freely in summer; but eggs are then cheap, and it is the *winter* that chiefly decides which side of the balance-sheet shall preponderate. Eggs in winter mean profit; the want of them as clearly means loss. Pullets hatched early will moult early also, not only getting better and quicker through the process, and having warmer weather for it, but getting ready to commence laying in good time again. To say, as some do, that no *hens* of any breed will lay in winter, is a mistake; we have often had Brahma hens re-commence laying in November.

Regarded as laying stock, therefore, one-third should consist of pullets hatched in March, another third of hens hatched the March previous, and the remainder of birds a year older

still, which will be killed at moulting time. Thus, every autumn, the hens at two years and a half will be killed, and replaced by pullets six months old, which will commence laying almost immediately, and be followed in succession by the hens as they moult out, so keeping up a regular supply. Late chickens should be either sold or killed for table.

Even in the many cases where only half a dozen hens are kept for the supply of a small family, no other plan will be remunerative. Each autumn two March pullets should be bought and two hens killed; when, if a non-sitting breed be selected, there will be no trouble, and an unfailing supply of eggs will be secured.

We have already expressed our preference for pure breeds, where possible; but the cost will deter many from obtaining them, and common-bred fowls selected with judgment will also yield a good return for their keep. Small, weedy-looking birds should always be rejected, and those which show signs of good parentage and good feeding be alone chosen. Any fowls which have been starved while growing will never lay well in after life. The kind known as "Cuckoo" fowls (resembling the Dominique) almost always lay well, and so do most birds having much black in the plumage. Again, as a rule it will be found that yellow or black-legged birds are generally good layers; but white-legged birds are mostly inferior, though excellent for the table. By attending to these particulars, and ascertaining carefully the date of hatching, very excellent and profitable stock may be secured by an outlay of only a few shillings.

CHAPTER III.

FEEDING AND GENERAL TREATMENT OF FOWLS.

Of the three essentials to successful poultry-keeping—proper accommodation, proper selection, and proper feeding—we have now considered the two first, and it remains to consider the third. If it be considered that the simple object to be attained is the conversion of so much grain or other food of one kind into eggs or meat, or so much food of another kind, it will be obvious that a proper system of feeding must have more *direct* influence upon the result than even the preceding points, though perhaps not more real. If treated rightly, the domestic fowl is the most profitable of all live stock; but that it seldom is treated rightly we are more and more convinced by the experience and correspondence of every year.

Thus it happens that any work on poultry, to be of real use, must almost of necessity be dogmatic. Unless many persons are told that they *must* treat their poultry in a certain way, they will not do it; and hence it is necessary to be definite and imperative, even regarding some details which might be varied with actual benefit if done judiciously, or may not be the very best in some particular circumstances. Again and again have editors of poultry organs to give the same answers to the same questions; again and again have we ourselves had the trouble of reading and answering letters complaining of want of success, addressed to us on account of our previous writings, only to find, on inquiry, that our very simplest and plainest directions had been utterly disregarded. Every real poultry authority we know makes the same complaint. People seem to think that if they only *read* sound directions, their fowls must thrive; and the amount of ignorance regarding poultry and their proper treatment is amazing. Three-fourths of any town population, even yet, believe that if a citizen be so insane as to keep his own fowls, every egg he obtains will cost him sixpence; whereas fourpence per dozen, under proper management, would be nearer the mark in England; while in America, where grain is so much cheaper, the dozen should cost five cents. But, always supposing a proper house for the number of fowls, and fowls properly chosen year by year, as in our last chapter, such a result will altogether depend upon ju[illegible]ious feeding.

[illegible]he feeding of any live stock is a very simple, but at the same time by no means an [illegible]blem. All food given represents cash expended, and this is easily enough calculated; bu[illegible]esult is not so readily seen without thought. Food may be *productive*, yielding more thai[illegible]n value; or it may be simply *wasted*, producing nothing whatever; or it may be actua[illegible]*vious* to the animal, every penny or cent expended producing so much actual loss. Thus, [illegible]case of fowls, the food may either yield a return, part repairing the waste of the anim[illegible]es, and part producing either extra growth and weight, or valuable eggs; or it may si[illegible]naintain the bird in the same state or condition it was before; or it may produce un[illegible]fat, and thus be really injurious. And as every living creature requires *some* amount [illegible]d to support its life and energies, such amount obviously represents the *minimum* whic[illegible]be given; and the question really is, what result is obtained by all food

given over and above it. It is that surplus which, in the way we have seen, may be either productive, simply inoperative, or actually prejudicial. These things may seem truisms, but their right understanding will greatly pave the way to success in practice.

We need not stop to prove that as an egg contains animal food in its most concentrated natural form—a fact well known to all physicians—its regular production must demand a regular and sufficient supply of food adapted to produce it. There is an amazing difference between the appetites of hens which are not laying and those which are, or are about to commence. Hence, the starving system of feeding poultry can never afford any return; and fowls which are only allowed to eat "what they pick up," will, in England at least, rarely produce anything worth speaking of. In America and the Colonies, where grain is little thought of, and abounds to some extent all over the farm, or in the English stack-yard at harvest seasons, it may be different; but as a rule, chance feeding will always result in very chance receipts, added to which, birds thus left to forage for themselves will in many cases lay away, where their eggs can never be found. But in general the mistake is the other way; and with respect to adult fowls, we have not the slightest hesitation in saying that at least three-fourths of all kept by the middle classes, excepting those of experienced "fanciers," have far too much to eat. Farmers' fowls get far too little, other people's mostly the reverse. They get fat; and a fat hen is never a good layer, while a pampered male bird is lazy, if not altogether useless for purposes of breeding.

As regards the nature of the food to be given, also, there is little sound knowledge upon the subject amongst most who keep poultry. We can well remember our own school-boy experience, when we kept fowls in a small stone-paved yard, disposing of the eggs to our maternal parent, and paying for the food out of our own private exchequer. Our first idea was that grain was the only and the natural food of poultry, and we accordingly fed them three times daily with as much as they would eat of that commodity. Had any one then hinted that our fowls were not properly fed, we would have scorned the idea with indignation. But it was so, and it is so in the scores of similar cases. Our birds would not thrive; they did not lay well, and often died. By degrees we found out why, and eventually, in that same small yard, made our poultry speculation *pay*, acquiring there, on those stones and amongst those difficulties which surrounded us on all sides, much of that practical knowledge of fowls, their ways, their wants, and their habits, which has been most useful to us in after life.

Grain *is* the natural food of fowls; but so is grass, so are worms; and it would be as reasonable to feed birds in confinement exclusively on either of these as on grain alone. Moreover, a fowl in its state of nature lives under altogether different conditions. It is only intended to lay some dozen or so eggs in a season, whereas we wish to get about ten times that number. The wild fowl, again, finds its food grain by grain; and that everlasting mill called the gizzard, called into incessant action, always reduces the grain as swallowed, so that the crop is rarely, if ever, distended. The bird has literally to work, and work hard, for all it finds; so that all its functions are kept in the most vigorous exercise. Under such conditions, with the grass and worms it also picks up, the grains or seeds which forms its principal food do maintain the creature in the highest health and condition; though, as we have seen, the egg production is not such as would yield a profit to the poultry-keeper. These things again are truisms; but we repeat them because we constantly find persons who are for "following nature;" and the theory has a certain plausibility if not exposed. If we "follow nature," we must follow her altogether, and we must be content with natural results, which in this case would be one nest of eggs per annum; if we are to keep them in confinement, and to get many times the amount of eggs, we must change our diet

accordingly. In was in this respect that Mr. Geyelin, the [illegible]tor of the now defunct "National Poultry Company," did good service, and which it would [illegible]ateful not to acknowledge, to poultry-culture. It was a necessity his idea should fail, beca[illegible]upposing it possible to rear chickens in immense numbers and to profit, in sheds only six fe[illegible]elve, he literally "worked it to death." But he clearly demonstrated what could be done in a [illegible]pace by *soft food*. He was not the first to find this out; almost every fancier had done so [illegible]im: but he was the first who publicly drew attention to the necessity and advantage of empl[illegible]od in the form of meal, and of deodorising all the manure by dry earth in confined runs. In s[illegible]the absurdities with which his pamphlet abounded, many of the principles which he enunciate[illegible] the foundation of all successful poultry management.

No fowls require, at most, more than three meals per day; and as a rule, do [illegible]r with two. The first should, or in confinement *must*, consist of soft or pulpy food of some k[illegible]d be given early in the morning. If the fowls be at liberty, or have large grass-runs, they sho[illegible] nothing further until about half an hour before they go to roost, when they should have anoth[illegible] of grain. In point of quantity no fixed scale can be given; some breeds eat double the quantit[illegible] others, and even the same hen will require very different allowance, according as she is laying o[illegible] not at the time. Nevertheless, there is a rule, simple and easily understood, which will unfailingly secure both health and eggs; and that is, to give the birds just as much as they will eat with an eager or ravenous appetite, and *no more*. We are speaking now of adult fowls, and such must on no account be allowed to have as much as they will eat: directly they cease to *run*, if the food is thrown to them, or commence "picking it over," if given in a trough or saucer, it should be stopped or taken away. On no account especially must any be left. While no absolute scale can be given for the reasons stated, it will be generally found that hens of large breeds, wh[illegible] moulting, require about as much meal or dough as would make a ball two and a half inches in diameter for their feed every morning, and a *woman's* handful (we mean to be taken with the palm downwards) of grain at night. Indeed, for large breeds this "handful" system will generally be a safe one as regards the grain; but smaller fowls, from Spanish downwards, should have rather less according to size. But the only real rule is that we have given above, and we would add the caution that many, on trial, will not think it enough. We often have had visitors remark that our own fowls "must be half-starving," as they saw them fly up in the air when their breakfast was taken out to them. They are, in fact, always ready for food; but we are certain, from long experience, that this system of feeding is the best, not only for profit, but for real healthy condition. In bad or cold weather, or when moulting, a very little more may be allowed; but we *never* allow our own birds (we speak of adults only) to eat to repletion. Such will always destroy the profit of keeping poultry, at least in a confined space. Even in strict confinement, where every atom of food must be supplied, there should not be a third regular meal, but simply a small handful of grain among every two or three birds, according to their size, to afford them gratification and keep the appetite alive. Occasionally, in such circumstances, the diet may be varied by giving the handful each of grain in the middle of the day; and then, instead of corn, giving a *very* scanty feed of soft food, not more than half the breakfast, the last thing at night. There are yet some regarded as authorities who advise the old-fashioned plan of giving grain in the morning and meal at night; but we have tried and watched almost every mode of feeding, and, without hesitation, abide by what we have laid down, grain alone giving the needful support during the long night which has to pass before the next meal.

In choosing food, either meal or grain, there is considerable variety to select from, and it is well now and then to give a change. In arranging this, the poultry-keeper should be guided

by the value in different ingredients of the various foods, for which purpose we reproduce the following table, which since its publication in the "Poultry Diary" has been frequently copied, but adding hempseed, buckwheat, and potatoes to the list, and re-arranging the various foods in the order of their richness in the nitrogenous or flesh-forming substances.*

There is in every 100 parts by weight of	Flesh-forming Material, viz., Gluten, &c.	Warmth giving and Fattening Material, viz.		Bone-making Materials, or Mineral Substances.	Husk or Fibre.	Water.
		Fat or Oil.	Starch.			
Beans and Peas . .	25	2	48	2	8	15
Oatmeal	18	6	63	2	2	9
Middlings, Thirds, or Fine Sharps . .	18	6	53	5	4	14
Oats	15	6	47	2	20	10
Wheat	12	3	70	2	1	12
Buckwheat	12	6	58	1½	11	11½
Barley	11	2	60	2	14	11
Indian Corn . . .	11	8	65	1	5	10
Hempseed	10	21	45	2	14	8
Rice	7	A trace.	80	A trace.	...	13
Potatoes	6½	...	41	2	...	50½
Milk	4½	3	5	¾	...	86¾

It will be seen that there are several substances often used as food for poultry which by this table are shown to be comparatively worthless. Rice, for instance, contains less than half the flesh or egg-forming material of several other grains, and is useless, except when mixed with milk for the purpose of fattening fowls. Cheap as it is, we would warn every one that it never *pays* to use rice as the food of laying birds. It will also be seen that potatoes form very poor nourishment, and should never be given except combined with other food rich in flesh-formers.

What, then, *should* be the staple? First of all we would place ground oats; not thin, husky horse-meat bruised, but good heavy white oats, such as weigh thirty-six to forty pounds per bushel, and ground up whole, husk and all, as they are ground in Sussex, so as to look almost like flour. The Sussex fowls are the finest, as a whole, in the world; and this is what they are chiefly fed upon. The husk is not taken out at all, but is ground up so fine as scarcely to appear; and fowls prefer this food to almost any other. There is often great difficulty in getting oats thus ground in any other locality, as the millstones require to be specially dressed for producing it; but on several occasions we have been able to get our own grain ground up whole sufficiently fine to be liked, though not quite equal to the Sussex samples. Oatmeal, which is the same grain ground after the outer shell or husk has been taken out, is also a most valuable food, but is usually too dear for feeding mere stock poultry. If bought in quantities of five hundredweight at a time, however, it can often be procured from the Glasgow dealers, of very fair quality, so as not to cost above 14s. to 16s. per hundredweight, and is then a remunerative food. Fine sharps, middlings, or "thirds" (it bears all these names, and in Ireland is called "pollard"), which consists of the finer or inside bran of wheat, contains the same amount of gluten, when good, as oatmeal, and is much cheaper, but is by itself too dry and "branny" to be relished by the birds. But mixed in equal quantities with barley-meal, it forms a cheap and most excellent food, and is also suitable for mixing with potatoes or boiled turnips when these are given. Indian meal is too fattening to

* In the last edition of his "Poultry Book," just published, Mr. Tegetmeier states that the table in its original form was copied by the "Poultry Diary" from a paper prepared by him for a County Agricultural Society.

be used for most poultry, except combined with other meals, and is also disliked. For laying birds it ought never to be used alone.

Ground oats, then, will make the best standard soft food, if it can be obtained. If not, sharps and barley-meal, mixed in equal portions, will make an excellent food, varied very rarely by boiled potatoes well mashed, and mixed with at least an equal weight of sharps alone. Now and then turnips, beet, or mangel-wurzel, boiled in as small a quantity of water as possible, may be mashed and mixed with sharps, and given to great advantage, or may be used as a permanent diet. Oatmeal may be used at discretion if only cheap enough, or mixed with barley-meal; which latter is also very good by itself when sharps cannot be had, but is better mixed with the latter when possible.

The proper mixing of this soft food is important, and error in its preparation is another fruitful source of failures to make a satisfactory profit. By far the larger number of servants *will* mix it too wet and sloppy, to save a few seconds additional time; and give it as a sticky, porridgy mass, which clings round the beaks of the fowls. Such feeding often causes diarrhœa, and in any case will rarely produce a proper egg-return. Again we shall be dogmatic, and lay down the universal rule that soft food *must* be so mixed that while none of the meal be left in powder or dry, the whole be so firm and "short" that a mass of it will break and crumble if thrown upon the ground; not on any account sticking with a "smack," as when a boy throws his lump of clay against a wall. All meal *can* be mixed this way if properly done, which is by stirring the water first well in with a spoon or stick, all remaining *apparently* too dry to mix thoroughly, and then kneading and squeezing it together in the hands. Food so mixed does twice the good, for the simple reasons that it is both more wholesome in itself and more enjoyed. Meal combined with turnips or potatoes need not be mixed quite so dry; but all soft food, rightly prepared, will be hard enough to be rolled out with a roller into a sheet, if required. Some good feeders prepare it thus, rolling it out and cutting the sheet into small finger-pieces, which are thrown to the fowls; but when mixed "short" as we have directed, it will break up easily without this trouble.

Where only a few fowls are kept, not exceeding say one bird for each member of the family, to supply eggs for the table occasionally, the morning food may be provided at very trifling expense by boiling daily the potato-peelings and all refuse vegetables, and mixing, as above, with fine sharps or middlings. The peelings and other vegetables must, however, be thoroughly boiled until quite *soft*, and a slight seasoning of salt, with in winter a very little pepper, should always be added. The want of egg-forming material, which we have already pointed out to be a fault in potatoes as a diet, is partly compensated by the sharps which are mixed with them; but in the case we are considering, is still further and most perfectly supplemented by the bone-scrapings and other kitchen refuse, and miscellaneous scraps of every kind, which should always be given to the fowls, but never infringing the "universal rule" as to quantity which we have already laid down. Supposing there are more of such scraps and odds and ends than the stock can eat with the eager appetites we have insisted upon, the simple remedy is to get one or two more birds.

The potatoes and sharps should always be given *warm;* and whenever meal is prepared with water, we should advise its being mixed boiling hot. The warmth greatly promotes health and laying, especially in cold weather; and the food being a little swelled, and in fact really half-cooked before it is eaten, it goes further and produces less excrement. The most celebrated and successful poultry superintendents we know always mix with boiling water; and where the contrary plan had been followed, and by their advice changed for this method, a marked improvement in the *condition* of the birds has invariably followed. We are not now considering prize

poultry, it is true; but these men have spent their lives in studying the management of fowls, and what they find best for birds worth a score of pounds each will also be best for commoner fowls, such as can be bought for a few shillings. Therefore, we repeat, let the breakfast be mixed with boiling water, and *always given warm.*

How the soft meat is given will depend on circumstances. Supposing a yard to be tolerably dry and clean, and that the proprietor or his servant can spend a few minutes over the fowls, it will be best to scatter it freely over the ground. Properly mixed, very little dust or dirt will adhere to it, and every bird will get its share. But if the weather be very wet this will hardly do, neither will it if the birds are confined in the shed, floored as this is with loose dust or sand. In such cases any common dish will do to put the food in, the quantity which the fowls will eat with proper appetite having been found by previous observation. A large garden saucer will answer; but if a dish can be procured with straight sides (as in the sketch Fig. 11) it will be better, as the fowls cannot then turn it over when they step on the edges, as they are apt to do with a dish wider at the top than the bottom: they cannot also rake the food out so readily with their beaks. The feeding "cages" usually sold are too heavy, cumbersome, and expensive for general use; but some years ago we gave in the "Practical Poultry Keeper" the annexed engraving of a loose, light cover we had contrived, of zinc or tin and wire, for preventing the fowls from walking upon or scratching earth into their food, which has since been manufactured for general use,

Fig. 11.

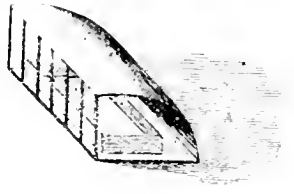


Fig. 12.

and will be found useful where they have to be altogether confined and fed upon a floor of dry rubbish, but for fowls fed with proper appetite in open yards, will not be needed. The front wires should be about eight inches in height.

The best and most generally useful vessel for feeding poultry is one we first saw in the yard of Mr. E. Jones, the celebrated Spanish breeder of Bristol, England, and was, we believe, his own contrivance; so that we have always found it had to be specially made (which is readily done in quantities of a dozen) at the nearest pottery. These dishes are circular in shape, and of the section represented, thus presenting a saucer at both top and bottom, the size being about eight inches

For Food. For Water.

Fig. 13.

across, and five inches deep. If the wide face be placed on the ground, the saucer with upright sides contains the soft food (which cannot be scratched or raked out), stands perfectly firm and steady even if perched upon, and is sufficiently raised to prevent dirt being scattered into the food. When turned the other way it forms a water-vessel, also raised from the ground, and which, from the slanting sides, does not touch the combs of Spanish or other large-combed breeds, for which the ordinary poultry-fountain is not suitable on account of the size of that appendage. It was, in fact,

the difficulty his fowls experienced in drinking from a fountain without damage or inconvenience that led Mr. Jones to adopt this vessel, which we can strongly recommend as a most useful, simple, and cheap addition to the poultry-yard.

With regard to grain, we prefer buckwheat as a staple to any other. We often see it stated in the poultry organs that it "is not good food;" we can only say we have used it largely for years, and find it as a rule both cheapest and best. All fowls become very fond of it as soon as they get to recognise its strange colour; and the fact that the French, who send such immense quantities of eggs and even poultry to the English market, use buckwheat almost exclusively both to feed and to fatten is alone enough to dispose of such absurd prejudices. Next to buckwheat in value stands *good* barley—such, we mean, as is used for malting—not inferior, husky, foreign samples. Then comes heavy white oats, thirty-six to forty pounds per bushel, and any of these may be changed for each other occasionally with advantage. Wheat is too dear to be used except for fancy poultry; and maize must be used, if at all, *very* sparingly indeed, on account of its tendency to make fat. We lay great stress on this caution, because it is a very favourite food, and the birds eat it greedily. Light-framed breeds, such as Spanish or Hamburghs, may have it in moderation, and even larger fowls may get it as an occasional change; but Asiatic breeds, especially if kept in confinement, should not be regularly fed upon it, or fat instead of eggs will be the almost invariable result. We need only give one further caution against the use of "mixtures" of grain, often so "strongly recommended" by advertisers. If all the grains be mixed, no change of diet becomes at all possible; therefore give each by itself, changing the sort at discretion. Sweepings or damaged corn, unless the damage be very slight indeed, will inevitably prove a losing speculation, besides occasionally poisoning the fowls; but if really sound "tail" or small wheat can be procured, it is cheap and valuable food, and promotes laying much.

Small white peas may be given occasionally with great benefit, provided the fowls will eat them, which they will generally but not always do. For an occasional change, barley may be steeped in water and left till it has sprouted a little, in which state it is greedily devoured by the fowls; but this must not be continued very long. It is sometimes said that much barley may be saved by leaving it in water to swell: but water is not *food;* and if the birds, as we insist, are only allowed the handful they really require—not as much as they will eat—to substitute water for part of their allowance is no economy. Brewers' grains, if fresh and good, may be given with advantage once or twice a week in winter, rather sparingly, as a mid-day feed.

Merely to keep adult fowls in health and good condition, they do not even in confinement require animal food; but if a regular supply of eggs be desired, birds penned up must have this. It is not to be made a regular meal of, and in ordinary households the kitchen scraps will furnish ample supply, as already hinted. If this be not sufficient, bullock's liver well boiled, chopped up and *slightly* seasoned with pepper and salt, will be the cheapest and best material generally, but in some localities sheep's pluck, or other parts of various animals, may be obtained at a less rate. The quantity to each hen should be about a cubic inch daily, in winter; in summer less, or it may be even discontinued, with little loss, at that time. The broth obtained from boiling the meat should always be used, so far as it will go, in mixing the food. Some meat thus given even every other day will make a considerable difference to the number of eggs in winter time, and in getting birds through the moult. Tallow-makers' greaves are often advertised, but we would give a caution never to use them in their entire state for fowls, as they cause loss of condition and a rank taste to the flesh when killed.* Fowls with good range need no animal food whatever, except in

* The proper use of greaves in getting fowls into "condition" for show will be mentioned in a subsequent chapter.

such severe weather that they cannot procure for themselves any of those insects or worms which form the most natural source of supply.

The last requisite in the shape of diet is a regular supply of *green food*. Here, again, fowls kept on grass will need no attention; but for birds penned up the daily provision of it is an absolute necessity, though most beginners are ignorant of it. We well remember, in our own early experience, how our fowls died, we could not at first tell why; and one fine buff Cochin cock, whose only fault was a strong vulture-hook, was, in particular, greatly regretted. An experienced friend let us into the secret; and after that we had no difficulty in keeping fowls even where it is often said they *cannot* be kept in health—viz., in a yard paved with large flag-stones. We kept them so for years, with profit and success, when we had once learnt how to feed them. The best substitute for natural grass is a large fresh turf thrown in daily, or nearly so (green food must only be missed on rare and *unavoidable* occasions), to each four or five hens; and even in towns it is often possible to procure this by giving children a few pence every week to keep up a regular supply. Where *turf* is not allowed to be taken, *grass* may be cut or pulled; but in this case must be cut into green chaff with shears or a chaff machine. When cut, it may be thrown into the feeding-trough, but is better mixed in with and given with the soft food, when the birds *must* eat their regular portion. The latter plan is how we actually managed for years, in a yard only sixty-seven by thirty-five feet, divided into six pens; paying some child a few pence to bring fresh-cut grass daily, cutting it up and mixing it with their soft meat. The more given the better, so that it be given *regularly;* but a sudden increase of quantity should be guarded against, leading to disorder of the digestive system. Next to grass, cabbages or lettuces will be best; and in a family where green vegetables are used daily, the refuse leaves will supply enough. But such leaves must be cut or minced up with a chopper, or they will not be all eaten; and decaying cabbage-stumps in a pen are most offensive. If minced, nothing is usually left, stumps and all being eagerly devoured. Another capital plan is to *hang up* a whole cabbage in the shed by a string, about six inches from the ground, when picking at it will afford the fowls not only the food they need, but great amusement and occupation. A beet or mangel, cut in half, may be served in a similar manner, but in all these cases the refuse must be regularly cleared away.

It is not a good plan to keep fowls and ducks in the same yard; but, being sometimes unavoidable, it is well to know how to feed either class of poultry independent of the other. Fowls are very easily fed by laying a few boards about two feet high, on barrels or some other stand; the ducks rarely attempting to fly up as the fowls do. In feeding the ducks, on the other hand, a large flat pan should be procured, and a couple of bricks laid in the middle to keep the food round the edges. Then a large box or tub should be turned over the pan, and supported by a brick at each corner. This method depends upon the flexibility of the duck's neck, which enables it to pass its head under the tub and feed itself out of the pan, while the fowls can get nothing. This ingenious plan we take from the *American Agriculturist.*

Except in certain cases of disease which require stinting, fowls must *never* be left without water; and this must be so provided and placed that it may be kept cool and clean. For this reason, when the fountain or trough has to be placed in a shed, it should be raised two or three inches above the sand or gravel. Our own plan is to have about two feet square of hard raised ground in every shed, on which the food and water are placed. In ordinary weather the water, if clean, need only be changed every two days, provided it lasts so long; but in summer it *must* be filled up at least daily, and be kept in the shade. Stale, sun-warmed water is often fatal to fowls, leading to cholera and other diseases. The ordinary poultry-fountain is so well-known that description is needless; but there is a much superior construction made in earthenware by Messrs. Crook, of

which Fig. 14 is a representation. It is made in two parts, as shown, and is filled by inverting the bell-shaped portion which is then filled with water, after which the saucer is placed on and the whole turned over, when there will be a narrow channel of water all round. The advantage

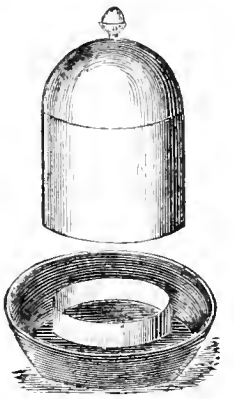


Fig. 14.

of this construction is that the green slime which always collects by degrees, and all other offensive matter, can be perfectly cleaned out whenever necessary. Baily's Patent Fountain, which is of metal, is also a good one; but both are unfortunately much more expensive than the common kind, which answers sufficiently well for practical purposes.

In winter, if it be cold, the fountain should be carefully emptied every night, to prevent frost, or if already frozen, be brought into the house to thaw, as fowls require to drink the first thing every morning. Snow must on no account be allowed to fall in the fountains, for in any quantity

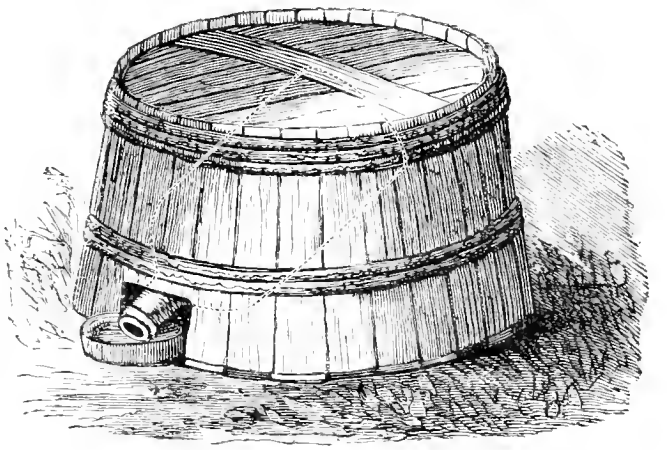


Fig. 15.

it has the singular property of reducing the birds in flesh and condition, so that they become mere skeletons. The water should therefore be placed under shelter. In very severe climates, such as North America or Northern Scotland, there is often considerable difficulty in keeping water from freezing even in the day-time; but the following ingenious plan (Fig. 15), for which we are again indebted to the *American Agriculturist*, answers the purpose perfectly. In a tub or half-barrel a large bottle is fixed slantwise, so that the mouth of the bottle is close to a notch cut in the rim of the tub. The bottle is to be fixed in position by a few slips of wood nailed, and the tub then

filled tightly with horse litter and manure, nailing more strips across the top of the tub to keep it in. When all is prepared, the bottle is filled with water, and corked, after which the whole is inverted as shown in the engraving, a pan slipped under the mouth of the bottle, and the cork withdrawn. The heat of the manure will remain for days, and keep the water from freezing, especially if put in the sun, unless the thermometer is below zero. Of course, whenever the heat of the manure becomes exhausted, the tub must be emptied and fresh filled; and every night the bottle must be allowed to empty itself, being refilled in the morning. During ordinary frosty weather pans are better than fountains, as a slight greasing will entirely prevent the ice adhering to them, and save all trouble whatever beyond filling when required.

In very cold or wet weather, it is well to add some iron to the water. Sulphate of iron alone becomes rusty, and disliked by the fowls, but a drop or two of sulphuric acid added will prevent this. A lump of sulphate of iron, the size of a filbert, and three drops of acid, will be enough for each gallon of water; or a tea-spoonful of tincture of iron (the recognised pharmaceutical preparation known as "tincture of steel" by the chemists, and which consists chiefly of iron and muriatic acid), will answer as well. One or the other should always be used during moulting-time, as it helps the fowls greatly through what is the most critical period of the year. At that season, also, the food should be specially looked after, and a little hempseed given two or three times a week is very beneficial. Very lately we have seen the use of hempseed condemned in one of the best poultry papers, and if given daily we believe it really is injurious; but sparingly, and in moderation, we are convinced from actual trial that it is of the very greatest use during the change of feathers. To delicate fowls, even ale may sometimes be given with advantage during moult; but most breeds are none the better for it, and in some it always causes purging. A little extra meat, however, is always beneficial at such seasons, and has another effect in the earlier commencement of laying.

It only remains to add, under the head of food, that fowls require some regular supply of *lime*, and also of gravel or small stones. The one is needed to form the egg-shells, the other to assist the gizzard. Old mortar will answer both purposes, and burnt, pulverised oyster-shells are also good. The stones they will get for themselves out of almost any run containing earth or sand. If the flooring of their shed be sifted *quite* fine, a little gravel or stone-grit of some kind must be specially provided.

Fowls, as is well known, clean themselves by rolling in dry earth or dust, and this must be afforded them, however confined the space. Supposing the shed to be floored with dry earth or sand as recommended, nothing further will be required; but if the floor be hard, a shallow box of ashes, road dust, or dry earth must be put in some corner for them. In a larger run, any out-of-the-way corner will do; and it is beneficial to mix a few pounds of black sulphur with the contents of the box. When this is properly attended to, and the house cleaned out every two days or so, there will usually be little trouble from vermin; but if these do appear, carbolic acid (already recommended in our first chapter) is the best remedy. In washing the walls, the best strength will be three ounces of the acid in crystals, dissolved in three gallons of lime-water. This will be certain death to all insects in the house itself, and the fowls themselves are to be dipped in a solution of one part carbolic acid to sixty parts water, long enough to soak them, after which they should be put by the fire to dry. Another excellent preparation for use in poultry-houses is carbolate of lime (which is identical with "Calvert's disinfecting powder," only much cheaper). This is both a powerful and pleasant disinfectant, whilst it will also destroy insects if dust liberally on the floor and against the walls. Being a dry powder, it may also be dusted in ne among the straw, where a wash cannot be used, and employed in this way is far more effect

than sulphur, or anything except "Persian powder," the price of which latter is its only objection to the poultry-keeper.

We have said that the very rudest contrivances answer for nests; but these must be regularly attended to, for if they become offensive the hens will often drop their eggs on the ground rather than resort to them. We have seen nests in which the straw had been left till nearly rotten, and swarming with vermin. Fern-leaves are disliked by insects, and make a good nest; and sassafras is best of all in localities where it is indigenous; but the staple filling will of course be straw in most instances. Oat straw is best; but whatever it is, it should be well crushed or broken up before being used, and be changed as often as it becomes foul or musty, the dirty straw being thrown along with the manure,

This last is of very great value. If saved and kept *dry* in old casks, under cover, it is equal to guano; but very few people will pay a fair price for it, and if there be a garden it should, therefore, be used. It must always be diluted, being either mixed with earth, or put in water and used in the liquid form, and is excellent for almost any crop, but especially green vegetables. The fair value is about seven shillings, or two American dollars, per hundredweight; but this will seldom be obtained. Nurserymen and gardeners are the most likely purchasers; but when none such can be found, the droppings can often be sold at about a shilling per bushel to morocco leather-dressers, and this offers the most promising market in a large town. Some definite arrangement should always be made, if possible, regarding this item, where there is no garden to consume it; as at seven shillings per hundredweight (weighed dry) the droppings of a large-sized fowl are worth about one shilling per annum, and really *are* worth that to a garden or a farm.

Feathers are not worth saving in small quantities, but where many fowls are kept they become of value. All may be used, the webs of the larger being stripped from the quills, and the small ones left as they are. The whole must then be placed in paper bags, quite loosely, and hung a few days in a warm place to dry. They should then be baked four times, for half an hour on each occasion, in a cool oven, drying for two days between each baking, when they will be perfectly cured. Half the cheaper feather-beds now sold are made of hen feathers; and after they are once put in the bags the process is little trouble.

Respecting the profit of poultry-keeping, opinions—and real experience, too—will somewhat vary. Pamphlets written by those ignorant of the subject have achieved a momentary popularity, but done much real harm, caused much disappointment and disgust, and occasioned much doubt in many minds as to any profit at all, by the sensational statements that the profit is equal to 500 per cent.; that eggs may be produced at one penny per dozen, and chickens at threepence per pound. We need hardly say that such statements are preposterous; they are no doubt very popular, but they are also very inaccurate.* But we never knew poultry, kept judiciously, and systematically looked after, that did not yield a good return, varying perhaps from 25 to 100 per cent. according to the circumstances. These differ greatly, and will affect the amount of profit. Where a few fowls are half kept on the kitchen scraps, if these are not charged and no extra expense is incurred for attendance, the profit is very great, and may exceed even 200 per cent. on the actual outlay. On an average, where all the food has to be bought, a large hen will cost from five shillings to six shillings per annum, and she ought to lay 150 eggs in that time, supposing she is chosen, housed, fed, and managed as we have directed. At one penny per egg—a very moderate price now—this would give rather over 100 per cent., not including

* Thus a pamphlet now particularly in view states the cost of keeping fowls at from one penny to three-halfpence per week, and even at the lower figure it will be seen that the bird must lay *a dozen eggs per week* to produce them at the cost stated.

anything for attendance, repairs, and renewing utensils: as for the bird herself, she should be worth, when killed, as much as she cost till she began to lay. A large flock will need an attendant, and this will complicate the question considerably; still more will the keeping of "prize" poultry, which may either add to the profit or cause actual loss, as it is conducted with judgment or otherwise.

The importance of securing eggs in winter we have already hinted at. The early-hatched pullets will need no particular treatment as regards this, beyond giving them, as autumn advances, a moderate allowance of animal food in cases where no grass-run is at hand to afford it naturally; but the laying of the last year's hens will depend much upon judicious management. Hens which lay late into the autumn cannot be reasonably expected to recommence till late in the new year, especially if the moult has found them producing eggs, in which case several of the best-laying breeds will continue till the process is nearly completed, and by this double drain so exhaust the system that they literally *cannot* recommence production till February or March. The best way of preventing this is to allow each hen, as she becomes broody in the autumn, either to hatch and rear a brood, or sit on the nest for six weeks. Either plan will hasten the moult, and next year's production of eggs as well; and a young brood will give no trouble in rearing if ducklings be chosen, which may be made fit to kill in ten to twelve weeks, and thus save the loss of the hen's time. Early eggs also depend much on early mating, for it will be found that as a general rule hens which are healthy, and have got well over the moult, will commence laying about three weeks after mating, if separated before. Hence the stock-pens should be arranged and put together as early after the 1st of November as possible.

Another very material point is to see that eggs are not laid away or stolen. On several occasions we have been requested to examine into matters, and have found the poultry well chosen, well fed, and evidently in good laying condition, but very few eggs. Diligent search has then discovered whole nests laid away in shrubberies or under hayricks. Poultry on a farm are peculiarly liable to disappoint in this way unless very sharply looked after. In another instance we could detect nothing wrong, and as the poultry were in yards the eggs could not be thus accounted for. At length, in despair, we advised locks on all the house doors, but the suggestion was received with indignation. It was, however, adopted, and the immediate result was a plentiful supply of eggs. Dairy cows would not pay their expenses if the milk was regularly stolen, or suffered to run over the pails after these were filled; and such matters require careful examination before it is said that poultry are unremunerative. Many people, otherwise fairly honest, appear to have no conscience at all as to stealing eggs; and, while we would never be the first to subject faithful servants to what would probably be unjust suspicion, we would always advise, especially when considerable numbers of poultry are kept, that a watchful eye be kept by the proprietor himself over these matters. Want of such attention turns many a real profit into a loss.

We need not say that it is far better if the whole concern—large or small—be conducted as a strict matter of business, and on ordinary business principles. One of the first of these will be to purchase the food wholesale and at the best prices, not always implicitly trusting the retail dealer, but examining the market-rates to see if more than a fair profit is superadded. Another will be the keeping of a fair account; but we are no advocates, in ordinary cases, for those absurdly minute schemes of poultry accounts which are advised by some, putting down every egg, and tracing cost of each brood of chickens weekly, from the shell. It is, indeed, well to ascertain and record the cost of a brood at different ages; but *once* done, no further object will be gained by repeating the experiment: and, looking at some of these elaborate schemes, we cannot help

reflecting, with a very keen business man who was shown one, "That's all very well; but *time*, sir, *time!*" A simple cash account, divided into three or four heads on each side, thus, will answer every useful purpose and give very little trouble, while it may be balanced up as often as preferred,

RECEIPTS.					EXPENDITURE.					
Date and Particulars.	Eggs sold or used.	Chickens sold or used.	Old Stock sold.	Total.	Date and Particulars.	Chicken Food.	Stock Food.	Stock bought	Utensils, Repairs, and Sundries, including Attendance, if any.	Total.

but every year at least. Where fancy poultry is bred, an additional column may be needed for show and other items; but the simpler the whole be kept the better, so that the comparative profit of *each branch* of the concern can be ascertained. This is important, as any useless or losing department can often be discarded, to the saving of trouble, and at the same time improvement of the exchequer. In many cases a simple cash account, not subdivided at all, will be sufficient. We have employed such for years, with an expenditure of from £80 to £100 per annum; and whenever we wish to investigate or analyse anything apparently wrong, simply go through the year's record and add up the expenditure under the head required, which takes less time by far than keeping an elaborate account throughout. But any account, fairly kept, and with judicious management, will prove conclusively that those who believe poultry cannot be made remunerative do a grievous wrong to the most profitable and productive of any live stock in the world.

CHAPTER IV.

EGGS AND INCUBATION.

THE motto "*omne animal ex ovo*," adopted by the New York State Poultry Society, aptly expresses a truth well known to all physiologists. All real animal life is developed from the egg-form; the only difference consisting in the mode of development, which in some cases is entirely completed within the body of the female, whilst in others more or less of the process is carried on after separation from her. It is in these latter cases that some kind of hard case or shell becomes obviously necessary for the protection of the egg until the embryo is ready to commence its active existence; and as in the case of birds we find the whole egg-structure in the most perfectly organised form, it may be proper to give a very short and popular description of its formation.

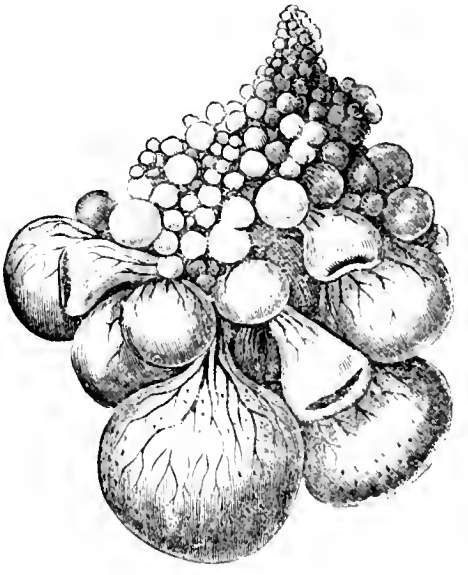


Fig. 16.

The ovary of a hen during or near her laying season presents an appearance much like that of a cluster of fruit, and is very accurately shown by the illustration (Fig. 16). There are more properly two such organs in every bird; but one remains merely rudimentary and undeveloped, the fertile one being almost always that on the left of the spine, to which it is attached by means of the peritoneal membrane. By the ovary the essential part of the egg, which consists of the germ, and also the yolk, are formed, each egg being contained within a thin and transparent ovisac, connected by a narrow stem or pedicle with the ovary. These rudimentary

eggs are of different sizes, according to the different degree of development, and during the period of laying are constantly coming to maturity in due succession, so as to keep up the supply of eggs with which we are so familiar. It is worthy of remark that from the germ of every egg a narrow passage or canal runs to a small chamber in the centre of the yolk, which can be readily seen if the yolk of a hard-boiled egg be cut across.

As the yolk becomes fully matured, the enclosing membrane or *ovisac* becomes thinner and thinner, especially round its greatest diameter or equator, which then exhibits a pale zone or belt called the *stigma*. Finally fecundation takes place, the sac ruptures at the stigma, and the liberated yolk and germ, surrounded by a very thin and delicate membrane, is received by the funnel-shaped opening of the *oviduct* or egg-passage, whose office it is to convey it to the outer world, and on its way to clothe it with the other structures needful for its development and preservation. This organ, with its various convolutions a little modified for convenience of representation, is shown at Fig. 17, and in an ordinary hen is nearly two feet in length. It will easily be seen that not unfrequently *two* yolks may become detached and enter the oviduct at nearly the same time; in which case they are very likely to be enveloped in the same white and shell, causing the "double egg" so well known to every poultry-keeper.

Fig. 17.

Thus received into the oviduct, the yolk becomes enveloped in a glairy fluid called the white, or by chemists *albumen*. This is secreted by the mucous membrane of the oviduct, and added layer by layer as the egg passes on. These different layers can be easily seen, and even peeled off in succession when an egg is hard-boiled. The uses of the white or albumen are manifold. It is eminently nutritious, forming, indeed, the chief nourishment of the chick during its growth in the shell; as it becomes absorbed by the little animal, and forming as it does by far the greater part of the egg when laid, it gives the fast-growing little body the needed increase of room; it is a very bad conductor of heat, and hence guards the hatching egg against the fatal chills which would otherwise occur when the hen left the nest; and finally, it preserves the still more delicate yolk and vital germ from concussion or other violent injury. The manner in which the last purpose is effected is very beautiful. Besides the ordinary white, two longitudinal cords or strings of much denser and even slightly fibrous albumen are formed, which are easily distinguished if an egg be broken into a basin. These cords are termed the *chalazæ*, and are attached in a spiral form to the under side of the yolk, to which they therefore serve as ballast or weights, and always *keep the germ uppermost*, where it can best receive the heat from the sitting hen.

At a still further point of the oviduct the egg becomes invested with the skin or parchment-like covering which is found inside the shell, and is called by physiologists the *membrana putaminis*. In reality this skin consists of two layers, which can easily be separated; and in fact at the large end of the egg they do separate entirely, forming what is commonly called the air-bubble, or by anatomists the *vesicula aëris*. How formed is still a mystery; but it is an ascertained fact that the air in this bubble or chamber contains a far larger portion of oxygen than the atmosphere. At first the chamber does not exceed a quarter of an inch in diameter, but as the egg gets stale it becomes larger and larger, so that even in eggs stored it fills

at length a large portion of the space within the shell, the egg itself drying up in proportion. In eggs on the point of hatching it usually occupies about one-fifth of the space. It has been conclusively proved by experiments that the perforation of this air-chamber, even by a needle-point, is an effectual prevention of successful hatching.

In the last portion of the oviduct the egg becomes coated with that calcareous deposit which forms the shell, after which it passes into the cloaca and is ready for expulsion. In some breeds colouring matter is added to the solid ingredient, producing the deep-coloured eggs of the Cochin, and in other birds the splashed and spotted patterns so well known. In fowls which lay coloured eggs similar splashes often occur, and we have had Brahma hens which laid eggs with a white ground, covered thickly over by chocolate-coloured spots. We have had others, again, lay eggs covered apparently with a coat of whitewash, which on being rubbed off with a rough cloth revealed the usual buff-brown tint beneath. All these things obviously depend on some peculiar condition of the secreting organs, as does the shape of the egg of each bird when finally laid.

Many occasional departures from the ordinary type of egg will now be readily understood. If the latter portion of the oviduct be in an unhealthy condition, or if yolks be matured by the ovary faster than shells can be formed by that organ, "soft" or unshelled eggs will be produced. If, on the contrary, the oviduct and its glands be active, while the supply of yolks is temporarily exhausted, the diminutive eggs, which consist only of white and shell, and which not unfrequently terminate the laying of a long batch, may be expected to occur. Any inflammation of the middle portion of the passage will result in eggs without even the membranous skin; and if the entire canal be in an inflamed condition, yolks alone will probably be dropped without any addition whatever, even of white. This last occurrence therefore always denotes a very serious condition, and should be met at once by depletic medicines, or it will probably be followed by the loss of the bird.

As we have already remarked, the white forms the principal nourishment of the chick whilst within the egg; and we repeat this because it is the very opposite of the popular idea. Many writers who ought to know better have stated that the yolk furnishes the food of the chick, whereas the fact is that up to about twenty-four hours before hatching the yolk suffers hardly any diminution. At about that time it begins to be absorbed through the umbilicus or navel into the abdomen of the chicken, and is in fact a wonderful provision by which the newly-hatched little animal is supplied gradually with the most highly nutritious food during the earlier stages of its existence. Traces of the yolk may be found by dissection in the abdomen of the chicken even after ten days have elapsed; and in chickens just hatched much is often not fully entered within the abdominal cavity, and can be plainly seen with the naked eye.

We have no space to enter fully into the different stages of development of the chick during the period of incubation, but must confine ourselves to a description of the first, middle, and final stages of the process. When the egg has been sat upon or placed in an incubator for a few hours, the size of the germ can be seen to be sensibly enlarged; and before the expiration of twenty-four hours small blood-vessels can be seen round it, which under the microscope present the most beautiful appearances which can be imagined. About the third day a membrane called the *allantois*, and the purpose of which is to supply to the blood of the chick the oxygen which it obtains through the shell from the external air, begins to envelop the entire organism, and the egg presents somewhat the appearance of Fig. 18. At this period the chicken appears as a small gelatinous mass, of a nearly blood-red colour; but the rudiments of the head and limbs can be easily discovered by careful examination. By the end of the tenth day

the eyes are clearly distinguishable, the feathers have begun to be formed, scales are perceptible on the legs, and the skeleton has assumed an evident bony consistence. About this time also movement is perceptible, and the *allantois*, or respiratory membrane, exhibits a very complex and beautiful series of blood-vessels, which draw air rapidly through the shell, and act as lungs to

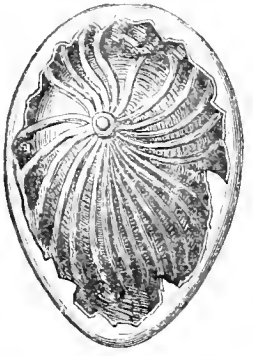


Fig. 18.

Fig. 19.

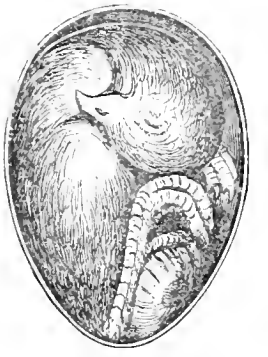


Fig. 20.

the now fast-growing chicken. The development of the chick at the eleventh day is shown in Fig. 19. From this date the various organs mature steadily and rapidly: till about the nineteenth day the beak of the chick ruptures the air-bubble at the end of the egg, now become very much enlarged, and the chick for the first time breathes through the lungs. The immediate result of thus inhaling the air is a stimulation which produces very lively motion, so that the egg if now placed in warm water moves about in a most curious manner, as already stated. The development, as seen in Fig. 20, is now very perfect; indeed, little difference can be observed between the present stage and the perfect chick, except that the yolk, shown in the figure, and more clearly represented in Fig. 21, is not yet drawn into the abdomen, where, as before observed,

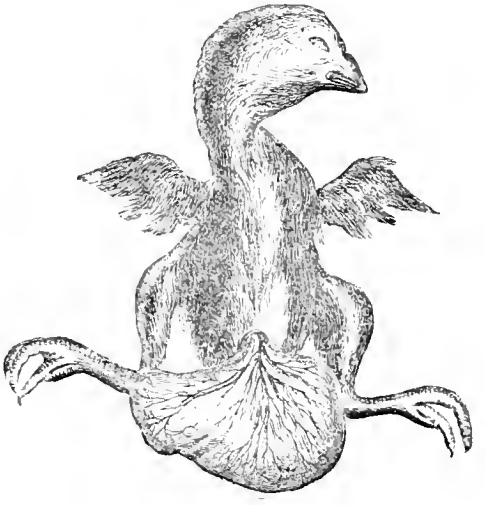


Fig. 21.—Chick two days before exclusion.

it is destined for the food of the newly-hatched bird This is however rapidly accomplished. when the chick is ready for entrance into the outside world.

The chick breaks the shell by giving two or three smart taps every now and then with a sharp-

pointed scale, provided for that purpose by the Creator on the end of its beak, and which in about two days after falls off. The tapping of the chick in a lively egg can often be *felt* whilst holding it in the hand; but the old notion that the *constant* tapping sound heard during the last two days proceeds from these blows, has been shown to be erroneous. Dr. Horner, in a paper read to the British Association, and given by Mr. Tegetmeier in his "Poultry Book," details experiments which clearly prove that the sounds in question arise entirely from respiratory action, and that the actual fracture arises from much more violent and spasmodic efforts made every five or six minutes. At length one of these blows results in a star-like crack; this quickly becomes a tiny hole; and as the

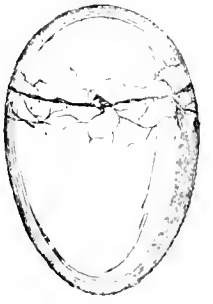


Fig. 22.

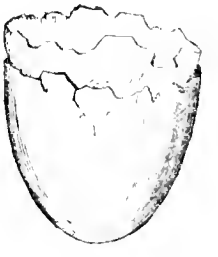


Fig. 23.

chick works round, a line is gradually chipped, cutting off about one-third of the shell at the large end, in the manner shown in Fig. 22. At length a vigorous stretch thrusts the two sections asunder, and the chick is free. When newly hatched it is wet all over, and each tuft of down is enclosed in a very thin membranous sheath; but as the chick dries with the warmth of the hen, and the down expands, these split and fall off; and the little creature assumes that beautiful furry appearance so indescribably fascinating to young amateurs. After hatching, the two halves of the egg-shell are always found packed away one within the other, in the manner shown by Fig. 23, so as to occupy the least possible space within the nest.

We may now pass on to the practical business of the poultry-yard. Whatever number of poultry be kept, it is important that the eggs should be regularly collected at least every day; and if rearing chickens form any part of the plan of operations, the owner or his servant should learn to recognise the egg of every individual hen of value. This can always be done by watching the birds as opportunity offers, for a few days; every egg in a pen, or generally so, having some individual character in colour, shape, or size, by which it may be known from others. So true is this that even in large yards of prize poultry the superintendent knows the eggs of all his best birds; and even in the case of common fowls, by setting only from the finest and the best layers, great improvement may be made in the yard in the course of a few years. Hens of the better laying breeds, properly managed, should lay about 150 eggs per annum. Individuals will do much more than this, and have been known to exceed even 300; but some will hardly come up to it, and we speak of what *can be done with a whole stock*, if properly chosen and looked after. We have often known Hamburghs do more, when very favourably circumstanced, even on an average; but not any other breed, save in individual cases. We believe, however, this average might be exceeded by selecting stock for some time only from the best layers. Even the best-laying breeds are bred by fanciers chiefly for their conventional standard of "points;" and, as the best birds by this standard are very seldom the best layers, the laying powers are not developed as they might be; but by setting eggs only from the most productive birds, and continuing the process steadily, wonderful results might be obtained. Indeed, as individual hens

will lay even 250 eggs in a year, there is no reason why a race could not be established which should do the same.

The best nest-eggs we are acquainted with are those made of white china, as they keep clean and are easily washed. Enamelled wood are not so good, and lumps of chalk become very dirty in a little time. Some people make a small hole in a natural egg, expel the contents, and refill the shell with plaster of Paris; this also makes a good nest-egg. The furnishing of an egg of some sort to every nest is very important, even in seasons when the birds are not laying, as it tends greatly to prevent the hens from laying away. When a hen has once laid in a nest, she forms generally an attachment to it; hence the importance of inducing her to lay at home from the first, if the run be large.

Occasionally hens acquire the vicious habit of eating their eggs. They are often literally *taught* to do this, by the foolish practice of breaking up egg-shells and giving them to eat; but the most usual occasion of commencing the vice is an accidental breakage in the nest. If, for instance, a hen breaks one egg whilst sitting, she will sometimes (fortunately not often) break and eat the whole nest afterwards. When the habit is detected early it may generally be cured, by filling an egg-shell with the strongest mustard which can be obtained, mixed rather thick, and placing it in the nest. Cayenne, as some recommend, does not answer, not having the yellow appearance of a yolk. The hen will endeavour to eat it, and, we need not say, gets punished rather severely. We have known this to cure the hen in two cases out of three, where tried; if not, we should kill her, unless of particular value or a special pet. In that case the only plan is to form all the nests with a false bottom (as shewn in Fig. 24), on a plan contrived by an ingenious

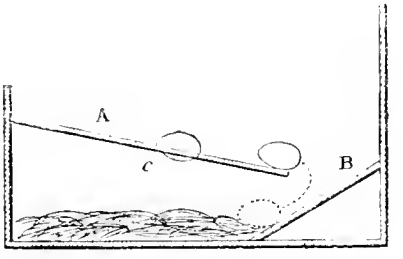


Fig. 24.

[illegible] *Horticulture*. The board A forms an inclined plane, down which [illegible] of course beyond the hen's reach before she can peck at [illegible] several hens use the same nest the eggs are not soiled, however dirty the weath[illegible] eggs are only wanted for eating, the boards should be covered with smooth matting or carpet, as advised by the inventor; but if required for setting, the striking on the board B might injure vitality, and B should therefore consist only of canvas stretched on a frame, and some hay or other padding be put in the bottom. The only disadvantage of this nest is the difficulty of using a nest-egg; but by sinking this half through the top board, as at C, and fastening with some cement, the object will be easily accomplished, and valuable hens may thus be saved whose lives otherwise must be sacrificed.

For storing eggs, a very good plan is to have a large board pierced with holes, in regular rows. Many breeders keep them in bran; and this latter method is perhaps best for those meant only to be eaten: but for setting hens the pierced board has many obvious conveniences. They should be always kept with the *large* end downwards. This direction being exactly contrary to that usually

given, we should state that our attention was first called specially to the subject by a most intelligent lady who advocated this plan, alleging as the probable reason of its superiority, "Keeping eggs on the small end appears to me to cause the air-bubble to spread, detaching it from the shell, or, rather, from its membranous lining; and after being so kept for a fortnight, the air-bubble will be found to be much spread, and the egg to have lost much vitality, though still very good for eating." She then described her success the other way, adding, "Owing to this method of storing, such a thing as a stale egg has never been known in my house; and as regards success in hatching, for several seasons, when I was able to attend to my poultry myself, of many broods set, every egg produced a chick." We were by no means hasty in adopting or recommending this plan; but, after careful observation and comparison for two seasons, have proved indisputably that both for eating or setting, eggs do keep much better the large end down. There is after a week a marked difference in eggs kept in the two positions as regards the spreading of the air-bubble, which is well known to affect both the freshness for eating and vitality for setting of stored eggs, and after three weeks the difference can be discerned even by the taste alone. It will, of course, matter little which mode is adopted, provided the eggs are used for either purpose within a short time; but the longer kept the more the difference from the two positions increases: and, while eggs stored with the small end down cannot be depended upon after a fortnight to produce more than a proportion of chickens, those kept in the way we now advocate will keep perfectly good for hatching a month or even more. We have sent thirty dark Brahma eggs to Ohio, U.S., which were twenty-two days on the road, yet they produced eighteen strong, lively chickens, or sixty per cent., though the eggs must have been nearly a month old. We ought however to add that, as already observed, we based our change of plan not on any single instance, however striking, but on systematic trial for two seasons. During each of these seasons we sent out about forty sittings (of ten each) dark Brahma eggs, and we satisfied ourselves most fully that with the ordinary age of eggs thus sold by English fanciers, say from three to thirteen days, the difference in favour of eggs stored the large end down amounted to nearly five per cent. This may not be much; but, as already remarked, with age it increases: and we have proved as conclusively, by actual trial, that eggs may be set and successfully hatched with remarkable uniformity, at ages which, kept in the usual method, would be nearly hopeless. We have known eggs kept a month hatch fairly even on the old system; but we are now speaking of usual and average results, and simply place at the service of fanciers in general the results of patient trial which have abundantly satisfied ourselves that there is a real difference in the product of the two positions.* With regard to packing, so far as actual injury is concerned, we believe there is no difference whatever in the two ways; but if the journey occupy any time the same position should be maintained for similar reasons.

There is not the slightest difficulty in packing eggs for setting so as to go with perfect safety any ordinary journey, and various methods are preferred by different fanciers. One very commonly employed, on account of the little trouble it gives, is to bed the eggs in bran in a wooden box; but this is not safe except for very short journeys, the bran settling down and often bringing the eggs to the sides or bottom of the box, where they get injured, even if not actually broken. This is easily prevented as follows:—Put a layer of bran an inch thick in the bottom, and cover with a sheet of paper, which will effectually prevent the eggs coming to

* It is only fair to him to state that in his pamphlet on "Poultry Keeping from a Commercial Point of View," Mr. Geyelin advocate[s] *theoretically* the same position for storing eggs; but the numerous absurdities in the other parts of his brochure deterred every one from paying much attention to this recommendation: and it was only the positive statement as to actual comparative *results* sent us by the lady alluded to which led us to devote serious experiment to the subject, with the result we have stated.

the bottom. Screw each egg in paper, rather loosely, so that the paper may present edges and folds, which will keep them from moving much in the bran, and bed them so that there is a clear inch between them, and also to the sides of the box. Fill in bran level with the eggs, after which cover with a sheet of paper, and add an inch of bran as in the bottom. If a second layer of eggs is necessary, cover with a third sheet of paper and proceed as before. The bran must be bedded in rather tightly, or as it settles it will get very loose. The well-known biscuit tins, of the size which contain about a cubic foot, make capital boxes for eggs packed in this way, and the covers only need tightly cording down. Wooden boxes must be either corded or *screwed*, nails being on no account used for fastening the cover, as the jarring of the hammer is very injurious. Sawdust may be employed in the same manner as bran, and in an emergency oats may be used, but other grain is too solid. Bedding in moss is perhaps the best method of all where it can be be obtained; and where it cannot, for fragile Bantam eggs cotton-wool or wadding should be employed. For other kinds, when moss cannot be had, we now prefer to send our own eggs in small round baskets or hampers made for the purpose. The proper size for ten Brahma eggs is ten inches across and six inches deep. Two inches of soft hay are put in the bottom, and a circle of hay an inch thick round the circumference. The eggs are then to be *loosely* wrapped in paper, leaving the ends square and not tucking them round, and each one being separately wrapped in a good wisp of soft hay, they are bedded in, by no means tightly, but only solid enough to keep them in position. Some more hay on the top completes the packing, after which the cover is tied down with a packing-needle. For sending a long voyage we would pack the same way, only using a strong wooden box with a screw-down cover or slide instead of the basket, and allowing more hay round the sides; we would also pack rather tighter. A package much recommended by some American fanciers consists of a wooden box, with a hay-cushion *outside* the bottom, formed by standing the box on a piece of canvas, then gathering the latter up at the edges, tacking it round the box an inch from the bottom, and stuffing with hay. A handle on the top is also added, and is a really good thing; but we believe the cushion part of the arrangement to be bad. The only consignment from the States we ever received which was packed on this system failed; and while we would build no conclusion on this alone, we would add that we made many and careful dynamical experiments on the empty box afterwards, which demonstrated beyond a doubt that, whatever might be the effect on the eggs, the *mechanical* effect of the outside cushion was greatly to *increase* the effect inside the box of any exterior concussion. The cushion in reality acts like the spring-board employed by acrobats, and the interior of the box is far more violently shaken than if none at all were employed. Hence we conclude unhesitatingly that whatever jars or concussions are to be encountered should be *received* by the rigid box itself [illegible] possible, and be neutralised by proper packing *within*. The mos[illegible]

[illegible], but the authorities wil[illegible] packing in small "pottle" baskets eggs simply wrapped in paper, or loosely bedding in bran eggs almost touching each other, cannot be too strongly condemned. It may be done through ignorance, but with regard to eggs for which a high price is paid is really little better than a swindle.

It is often worth while to preserve eggs for winter use, and there are several methods of doing so. One of the best, much used in France, is to smear them with olive oil, in which a little beeswax has been melted. Many persons use butter, but this is apt to turn rancid, which the oil and wax varnish never does. Another method is to pack them in brine; and thus kept they answer for many purposes, but the yolks become too hard and the whites too salt to be palatable boiled. Packed tightly in dry, white salt, they do better, and are pretty good even for boiling after six or eight

months. Another very good plan is to put them in lime-water, one peck of lime to thirty gallons of water; or, still better, to bed them closely in layers in lime and water, mixed into a soft paste. By this plan eggs are not much amiss, even for the breakfast-table, after six months' time. Still, the whites are "set" too much to be pleasant, and the best plan of all is the following:—To four gallons of boiling water add half a peck of new lime, stirring it some little time. When cold, remove any hard lumps by a coarse sieve, add ten ounces of salt and three ounces of cream of tartar, and mix the whole thoroughly. The mixture is then to be let stand to temper for a fortnight before use. The eggs are to be packed as closely as possible, and to be kept closely covered up. Thus treated, if put in when new laid, at nine months after they will eat quite as good as though laid only six days, though of course not quite like *new*-laid. These, indeed, are unapproachable, and an egg laid even twenty-four hours loses that indescribable *delicacy* of flavour so valued by all who keep their own poultry. Eggs preserved, by whatever method, should be treated the same day they are taken from the nest, as their quality much depends upon this being attended to.

The fertility of eggs must obviously depend much upon the number of hens allowed to each cock, which will vary according to the breed and other circumstances. In a wide run a cock may be allowed more hens than if penned in a small space. As a rule, the number of Dorkings, Cochins, or other *large* hens allowed a cock should on no account in confinement exceed four; while, if at large, the number may be often doubled: but an old bird must have less than a vigorous cockerel. Indeed, much must depend, in all cases, on the individual bird himself; and if his hens appear nearly stripped of feathers on the back, the obvious remedy is to allow him more. Spanish also should seldom have more than three or four hens; but Houdans and Hamburghs, Game, and in general all fowls of very lively habit, may be allowed from eight to twelve, if needful; further than that we would not go. Houdan cocks are generally the most vigorous of any.

It has often been said that the sex of the future chick could be foretold from the egg. The opinion is as old at least as Horace, who affirms (Lib. ii., Sat. 4) that the long eggs "would produce cocks," and are *sweeter* than the round! Columella, another old author, says the same. Others affirm that if the air-bubble at the large end of the egg be exactly in the centre, cocks will be produced, whereas those in which it is decidedly on one side will produce pullets. We can only say that we have altogether failed to succeed with any such test; and we should not have noticed a theory so long exploded had not a popular work lately published again revived it as if a known and tested fact. The truth is, that each hen lays eggs almost *exactly alike;* and by this theory they should, therefore, produce all cockerels or all pullets, which is never the case. Any sound knowledge of the formation of the egg, as already described, would prevent such absurdities from being believed without absolute proof, which has never yet been obtained. We have known, it is true, singular coincidences. We have known of thirty eggs selected on this system to produce cocks, and they did so; in consequence of which the experimenter and many others were quite convinced of the truth of the theory. But it unfortunately turned out that next year a nest selected on the same plan to produce pullets, produced nearly all cocks. Yet it would be reasonable to suppose that a theory which has survived two thousand years had *something* at the bottom of it; and careful experiment and inquiry (forced upon us by many who had read the pamphlet in question) have satisfied us of the following facts:—1. As a rule, the eggs of a pullet are longer in proportion and more pointed at the end than those of the same bird next year, or even later in the same season. 2. On an average, her early eggs produce cocks in about the proportion of six to four. (There will be numerous and startling exceptions both to this and the other rules: we are speaking of averages.) 3. The eggs laid by hens early

in the season are also, as a rule, perceptibly longer and more pointed than those laid later; and, 4. It is well known that cocks predominate on the average in early broods, but pullets in the later. Hence it is easy to see that in a decided majority of cases these coincidences might give a great preponderance of cocks; and it is accordingly remarkable that in most of the successful "guesses" it has been cockerels which have been selected for, whilst cases in which a nest of eggs chosen to produce pullets, *early in the season*, has proved true to the theory are almost unknown. Later on, for the same obvious reasons, a majority of pullets might easily occur. Some may, perhaps, blame us for giving serious consideration and trial to such a theory; but we never wish to shut our eyes to any new light whatever, and think mere ridicule a very sorry method for disposing of an alleged fact. We may add that the fewer hens be put with a cock, and the more vigorous the bird is, the more cockerels may be anticipated. This is taken advantage of by breeders of prize poultry, who want their cockerels hatched first on account of their slower fledging (contrary to the requirements of the commercial poultry-keeper, who wishes *pullets* first, for next winter's laying), and by mating a strong young cock with not more than three hens, usually obtain a very large proportion. The first eggs laid of a batch also contain more cockerels than the later ones, in general; but as we have already said, there will be startling exceptions to these rules or any others.

All eggs selected for hatching should be of the fair ordinary size *usually* laid by the hen or pullet, rejecting not only the small ones, but also the very large. They should also be firm and smooth in the shell; a very rough shell showing something wrong with the hen, and usually causing ill-success. Eggs unusually long, or, in fact, differing much in *any* way from the usual character of those laid by that particular bird, should also be rejected. That eggs be only saved from the *best* stock, even if the fowls are but common barn-door birds, is of course taken for granted.

Sitting hens do best if each one can have a small pen entirely to herself, where she can be left unmolested. A space of six feet by three will answer very well if furnished with a dust-bath, but once a week or so the hen should be allowed to stretch her legs for about three minutes, driving her back simply into her pen, and leaving her to go on the eggs herself. If she is thus let out first of all, and then fed in the pen, she will not remain off longer than usual. Quiet hens do not need even this relaxation, but will simply come off, feed and dust themselves, and return; in which case the eggs are far better left to them, only looking now and then to see none are broken. Several hens may be set in one larger pen, but in this case should be shut in and *taken* off one at a time in turn, else there will be danger of miscarriage, for hens in such circumstances have a perverse inclination to go on another's nest instead of their own. The same must be done when the hens have to be set in the ordinary laying-house, which, for want of room, is constantly the case; they must be regularly taken off and let into the shed or some other part of the run, and if possible the other fowls be *shut out* till they have fed and returned, or they will not get their proper allowance, and may also be so driven about as to be too long in going back. If this cannot be done, the best plan is to take them off at such a time that they can get their share of the regular breakfast with the other fowls; but as a broody hen ought to have as much as she likes, and be, moreover, fed with grain only, this arrangement is not a good one, and she ought to be *fed* by herself however she is set. When let alone in a special pen, food and water must be always by her, and the excrements be regularly removed; but some hens would never come off at all if thus left. Some people have thought such sitters best, and have even encouraged their maternal solicitude by feeding on the nest. This practice is not only cruel, sometimes laming a bird for life, but actually injurious, the periodical cooling of the eggs while the hen is off acting an important part in causing an

ingress of fresh air through the shell, and thus invigorating the embryo chick. Every hen, therefore, is to be taken off if she will not come, lifting her up gently by the wings, and taking especial care that none of her eggs are tucked up by them and withdrawn along with her.

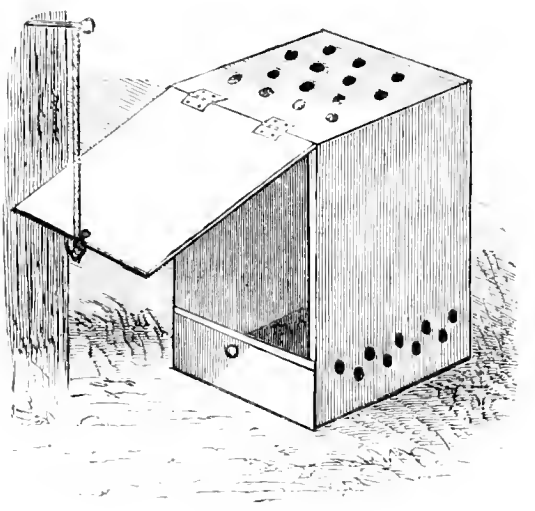


Fig. 25.

By far the most convenient nest for a sitting hen is that represented by Fig. 25. Each nest is made separate, open at the bottom for placing on the ground, and with a hinged flap in front, secured by any simple fastening. Holes three-quarters of an inch in diameter are bored near the bottom, in the sides, and also in the top, for ventilation, and the flap can be held up by a string and hook from any convenient point above, or be turned quite back. Such nests can be placed anywhere, and perfectly confine the hen without any trouble, so that she will not even try to come off till the flap is opened. Nests made in sets are not nearly so good; they cannot be cleaned well till all the hatching is done, and generally they will only fit one spot, whereas single nests made on this plan can be used in any way.

The nest should always, if possible, be on the ground, a wooden bottom being not so good, though chickens may be hatched in "high-level stations" if needful. The making up of the nest will differ according to the season. Early in spring, when the weather is cold or wet, eggs are easily chilled, and the nest should be prepared in a perfectly *dry* place, putting at the bottom a large shovelful of fine dry ashes, over which a good thick bed of hay or straw is to be comfortably arranged. The eggs at such times should not be damped at all, but four days before hatching about a quart of boiling water should be poured close *round* the nest on the ground. This will to some extent penetrate the ashes, and give just the dampness desirable. In wet weather even this is better undone; and in a severe winter every care will be needed to prevent the best eggs in the world being addled; twenty minutes' absence of the hen will do the mischief during intense frost, unless the nest is in a warm or very sheltered situation. In warm and dry weather, on the contrary, a damp and cool situation should be chosen, or means taken to make the nest so; otherwise the moisture of the eggs will be all evaporated to the consistency of glue, and the chickens, being unable to move round so as to crack the shell in half, will perish unless assisted. In nature the hen always seeks a damp, cool nest; and not only so, but her breast becomes saturated by the wet grass in which she feeds, and the eggs are thus moistened on her return. Attempting, then, to keep nest and eggs *dry*, however useful in winter, in summer loses many

a brood. Hence it is often advised to sprinkle the eggs daily with water in summer time; and formerly we always adopted this practice, but finding occasionally bad results follow it, careful examination showed that in some circumstances (probably chiefly depending on the hay or straw) parasites so small as to be only distinguished by the microscope swarmed over the shells, and were probably the cause of failures. This effect is only found occasionally, but we now prefer to find a damp, cool spot, scoop a slight hollow in the ground, place the nest-box over it, and put in a moderate quantity of fresh-cut *grass*. This retains some dampness a long time, but must not be wet, and usually answers well. A few days before hatching the ground round the nest may be watered as advised for winter, but with cold water in this case; and only two days before hatching would we take the hen off, and give the eggs either a good soak, as recommended further on, or a drenching with warm water. If we make a straw nest, our usual plan is to take the hen off about a week before hatching, and empty a full half-pint of warm water over the nest and eggs, repeating this the third day after, and once more before the eggs are chipped; but all this only refers to dry weather: if not warm or dry, watering the ground is quite sufficient. Damping the eggs should always be done at night, in order that the hen may be immediately replaced on them. We only add that the corners of the sitting-box should be well filled up with the grass or straw, else eggs may be rolled into them and become addled.

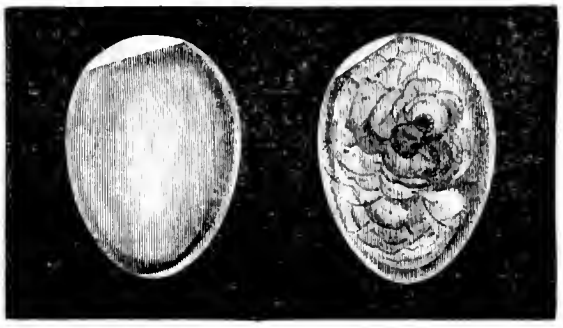
The proper size of a sitting-box for a Cochin, or other equally large bird, is fourteen or fifteen inches square; others in proportion. The hen must have *ample* room, and will then be much less likely to break the eggs when stepping in. Should any get broken, the first night afterwards a bucket of water heated to 105° should be taken into the house, and the hen being lifted off to an adjoining nest, all the eggs be placed in the pail. Then remove all dirty straw, and re-make the nest clean and comfortable, after which clean every soiled egg (still in the water) with a sponge, and when all are done, replace the whole, and the hen too. If the hen's breast be much soiled by the broken egg, that also must be cleansed thoroughly, or next time she comes off it will probably adhere to one or more eggs and repeat the accident. If a broken egg is neglected, probably no chicks will be obtained even should the others escape actual breakage, which they are very liable to.

Only a moderate number of eggs should be set. For very early broods, seven are quite enough, and at regular seasons eleven are sufficient, except for very large hens. Setting too many often loses all, for the hen not being able to cover the outside ones, they get chilled; and as she changes the position of the eggs every day, this happens to nearly all in turn. Besides, in setting eggs, it is not only needful to consider how many the hen can safely hatch, but how many she can *brood* when they begin to grow; else the weaker ones will be unable to get proper shelter, and perish. In summer we can be less particular. Whatever be the number, every egg should be marked with ink, as some hens will lay eggs several days after beginning to sit, and these must be removed. In case of valuable eggs, we also want to know which have hatched.

Rather small hens—about six pounds weight—make the best sitters. Game, though smaller, stand in the very first class; so do moderate-sized Dorkings. Dominiques, too, are excellent. Cochins and Brahmas make splendid sitters, from their tame and gentle disposition and ample feathering, and most barn-door fowls also sit well. Any hen must be well furnished with body-feathers, or the eggs will not be properly covered; and she ought also to be tolerably tame and quiet. It is, however, often necessary to purchase broody hens, and the wildest may usually be managed with quietness and care, lifting them every day firmly, but quietly, off their nests, and putting them down to feed, and then leaving them by themselves. When a strange hen is bargained for, a nest should be fully prepared for her beforehand, and at least two nest-eggs

provided. She should then be brought at night, in a comfortable basket, entirely shut in so as to be dark, with a nest-egg under her, and placed on the nest by candlelight; or still better, put down in front where she can see the nest-eggs, and be allowed to walk in herself; then shut in securely. Next morning, her food being provided before, she should be unfastened and allowed to come off herself, and to find her own way back. Not till she has thus found her own way twice should the eggs be trusted under her, when there will hardly ever be a failure.

At the expiration of from six to eight days the eggs should be examined by candlelight, as the unfertile ones can then be easily detected, and if the greater part be sterile time is saved, as the same hen may be at once set again. A new-laid egg, as is well-known, appears clear and translucent when held between the eye and a candle. Barren eggs appear so still (as shown in Fig. 26), even after being sat upon for a week; but the eggs which contain embryo chickens then



Barren Egg Fertile Egg

Fig. 26.

have a dark shadow in the centre, shading off to more transparency at the edges. The amount of shadow will vary with the time of incubation and size of the eggs, and perfect opacity will not be found till nine or ten days have elapsed, even with good-sized eggs; but after a few experiments, enclosing the egg between the thumb and forefinger, and turning the rest of the hand so as to shade the light as much as possible, no mistake will ever be made, and by degrees, even with the hand alone, the quality will be determined with certainty at the fifth day. By using a plate of tin or zinc, to shade the light, and holding the egg to an aperture in it, cut to the shape, the light may be brought closer, and the difference known at the fourth day; and by employing a more perfect apparatus (shown at Fig. 27), where the light of the lamp A is strongly thrown by the

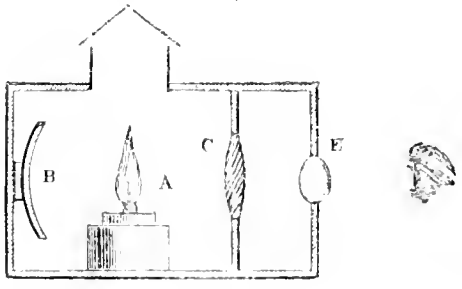


Fig. 27.

reflector B and lens C full upon the egg at E, and all other light excluded, fertile eggs can be known even at the end of thirty-six hours (some say twenty-four), the minute blood-vessels which begin to form round the germ being clearly visible. The sterile eggs up to about eight days are perfectly good for culinary purposes; and if withdrawn at the end of the second day will not

offend the palate when boiled, being indeed at that age quite unaffected. Hence in a large concern such an instrument becomes remunerative through the eggs it saves. Staler eggs may be either used for puddings, or boiled hard and chopped up for the chickens. There is another egg-tester made, in which the rays of the sun are thrown by a reflector through the egg. The only use of the reflector is to avoid having the sunlight directly before the eyes, except through the egg itself, and this instrument is not equal in power to the foregoing, besides being almost useless on dull days.

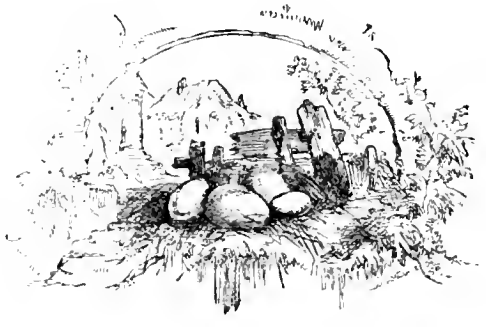
The hen should not be absent from the nest more than half an hour, and in time of frost even twenty minutes will frequently addle the eggs, unless set in a very warm place. Eggs are much more liable to this misfortune during the early stage than when they have been sat upon twelve or fourteen days; of this fact we are certain, though it is contrary to the statements of some writers who have never devoted real observation to the subject It may also save much heart-burning and groundless suspicion of egg-vendors, when a nest of purchased eggs fails, to say that if eggs at the end of the period, when broken explode, or are decomposed or changed in colour in any way, the eggs have been fertile and begun to hatch, but have been chilled or otherwise had their vitality destroyed during the process. Barren eggs *remain a clear yellow* to the last, and only emit a very strong *musty* smell. In ordinary weather, however, eggs will sometimes survive a very long absence, and really valuable eggs should never, therefore, be abandoned even after quite cold, till the hen has fairly sat her time out, and two or three days beyond. We have had a hen absent several hours in the middle of hatching, and still bring out a very fair number; and on another occasion, on the very last day of incubation, the eggs became really stone-cold, yet we saved the greater part. This last case was somewhat peculiar, the hen nearly at the end of the three weeks having manifested the unnatural vice of breaking the eggs and eating the nearly-developed chickens, and finally abandoning the nest altogether. She had been absent many hours when this was discovered, and we gave the sitting up as a matter of course. The treatment we adopted was to put the remaining eggs into a vessel of water heated to fully 105°, whilst another hen was being procured, and, to our astonishment, in about ten minutes six of the eggs showed signs of life, and eventually hatched. We note this because in all cases of a decided chill at any period this is the best plan that can be followed, the warm water getting the heat and life back into the eggs much more quickly and effectually than the hen can; besides which, if the hen has forsaken them, they may be kept thus for hours, if necessary, with the help of a thermometer, whilst other arrangements are being made.

The eggs of ordinary poultry require, as a rule, twenty-one days to hatch; but this is by no means a universal rule. Cold weather, or a prevailing east wind, will lengthen the time a day or more, whilst warm weather and an attentive sitter will hasten it. Stale eggs also hatch later than fresh. Hamburghs generally hatch at the expiration of the twentieth day, and Game Bantams often even on the nineteenth. Turkey eggs require from twenty-six to twenty-nine days, guinea-fowl, twenty-five to twenty-six, and pea-fowl, twenty-eight to thirty days. Pheasants hatch on the twenty-fourth or twenty-fifth day, and partridges the same. Ducks hatch on the twenty-eighth day, and geese on the thirtieth. A day or two before the eggs are "due," all which will hatch can readily be known by taking a large bucket filled with water heated to 105°, and immersing them in it. In a few minutes—not always at first—the "live" eggs will commence bobbing about in a very curious manner from the efforts of the chick within. We formerly disliked this plan; but if the hen be quiet we now find it a good one, and the eggs may be left to soak in the warm water for ten minutes, with marked benefit to the hatching.

They should be put under the hen whilst still wet. All eggs dead should be removed, as the hen can then take the better care of those left. If any valuable eggs are cracked, which evidently contain living chickens, the disaster may often be remedied by pasting a narrow slip of gummed paper over the crack, or, in the case of Bantam eggs, a small piece of goldbeater's-skin. Many eggs so treated have hatched in safety.

Some breeders like to have two hens sitting at the same time, the advantage being that when half the eggs of both are hatched, all the chickens can be given to one and all the eggs to the other. If there is much difference in the time the eggs chip, this is advisable; but in ordinary cases, where the eggs are properly fresh, things will go on better by leaving the hen alone. It should be seen that she has a thoroughly good feed the last time she is off, after which she should be shut in, so as to be quite dark; she will then stay quietly enough while hatching goes on. If all apparently be going on well, it is best so to leave her; but if the eggs are known to contain living chickens, yet no apparent progress be made, or if eggs are "starred" and nothing further take place after some hours, the chicks are probably too weakly to get out without assistance, or may, perhaps, be glued to the shell. Examination should be made from time to time to see how matters stand, and if necessary the chicks must be assisted. We formerly made many attempts at such assistance in vain, and, like many others, rushed to the conclusion that chicks could not be thus saved; but an accidental discovery put another face on the matter. *Keep the egg in warm water* (about 100°) while the assistance is being rendered, and success may be hoped for. The shell must be cracked very gently, and the inner membrane very tenderly peeled off till the chick be at liberty, keeping all but the beak under water till nearly clear. The operation must be performed in a warm place, and tenderly as if touching raw flesh; and it will be found that the water greatly facilitates matters, liberating the membrane if glued to the chick, and enabling it to be separated without loss of blood. The latter occurrence, nine times out of ten, is fatal; but if the operation be completed without blood-flowing, success may be anticipated, and the nearly dead chick may be put by the fire in flannel, or under the hen, if a quiet, good mother—under her at night, in any case—and next day may probably be as well as the others. We have latterly often saved chicks this way, where before using the warm water we always failed; and when hatching eggs of first-class quality, any pains to save an extra bird are well worth while.

The treatment of the chickens when hatched will be the subject of a succeeding chapter.



CHAPTER V.

ARTIFICIAL HATCHING.

It is not to be wondered at that much thought and labour should have been devoted to the subject of hatching by artificial means. Early chickens are important to all poultry-keepers, whatever be the object they have in view; and to the fancier, who desires to have birds fully matured and ready for exhibition in time for the autumn shows, they are absolutely essential to success. But hens rarely evince a desire to sit at such seasons, unless perhaps in the case of Cochin or Brahma pullets; and as these seldom go long enough with their chickens for very cold weather, the obtaining of suitable mothers early in the year is one of the fancier's most anxious cares. Often, indeed, all his efforts fail, and he is doomed to see such eggs as money could not purchase absolutely wasted for want of hens to sit upon them; while at the same time he would be willing to give almost any price in reason for the means of turning them into those chickens which he has well-founded hopes would win him many a prize at next season's shows. The commercial poultry-keeper is rather more fortunate. Having a large stock of birds, he has the greater chance of finding at least a few early sitters amongst them; but even he would gladly set more if he could, remembering the high prices of the early markets, which well repay extra housing, feeding, and care. When, therefore, it is known that for hundreds if not thousands of years chickens have been hatched in immense numbers, both in Egypt and in China, with no apparent difficulty and certainly with very little failure, the only marvel would seem to be that in Europe, with all the resources both of science and mechanical skill in construction, similar attempts have not been made upon a larger scale and with a larger measure of success.

It is perhaps possible that the apparent simplicity and certainty of the Oriental processes have caused the much more favourable conditions under which they are conducted to be forgotten. Both in China and in Egypt they are carried on, for instance, on a vast scale, under constant personal supervision, and in a temperature both warm and remarkably uniform. The eggs are not placed in confined drawers, but generally in roomy chambers: and comparing this with the process of nature, and with the conclusion to which both Mr. Halsted and ourselves have come, as observed further on, with regard to the necessity for ventilation, this fact has a significance which has probably to a great extent been overlooked. The simplicity of the process, in Egypt at least, may also be more apparent than real. The profession of artificial hatching is there strictly hereditary, or confined to certain families and handed down from father to son, and all its details are kept most religiously secret, under solemn oaths not to divulge them. Beyond the fact that the hatching chambers or ovens are underground, that the fuel employed is that so common in the East—cow-dung baked in the sun—and that after a certain period the ovens are believed to be closed, and the eggs not again meddled with until the proper period for hatching has expired, little or nothing is really known about it. We believe that no European has ever been really allowed to visit the *interior* of an oven, or to see the process actually going on; and when we consider that those who conduct it pass their lives in the occupation, and how jealously they guard all knowledge respecting it from any but the authorised members of the tribe, we can well believe that there *are* secrets which they have only themselves extorted from Nature by long study and observation, and which

these means alone will induce her to reveal to us. This must indeed be so, if it is really a fact which is reported by nearly every traveller in Egypt who has noticed the subject in any way, that the professional hatchers can *detect at a glance all fertile eggs* provided they are fresh. To us this fact may seem almost incredible; but with the multiplied testimony to it, it would be most foolish and rash to pronounce it so simply because we have at present no means by which we can pronounce such a decision ourselves. If it be a fact, then the long practice of the profession has indeed given these children of nature a knowledge which may well guide them to success in other particulars, and which we with all our scientific information have not been able to attain, though patience and observation have lately led to very satisfactory results in modern artificial hatching, as we shall presently see.

From the very commencement of attempts in this direction, there has been success sufficient to show that the thing *could* be done, and that the "how" was only a question of details. An "Eccalcobion" constructed in 1777 by M. Bonnemain was really to some extent used in a commercial way, and many chickens hatched in it were actually sold in the Paris market. Réaumur also obtained very fair results by surrounding wine-casks, in which the eggs were placed, with fermenting dung, renewed as often as the heat decreased. Cantelo appears to have been the first to consider that the heat should be applied from above, in imitation of the hen. We remarked in our last chapter that in the early stages of incubation, in whatever position the egg be placed, the yolk floats with the germ uppermost, and this is probably to bring it more under the influence of the warmth from the hen's breast; though the fact that both Chinese and Egyptians hatch in large apartments, where the air surrounding the egg is all of one temperature, proves that this arrangement can hardly be of the importance some have supposed. Be this as it may, Cantelo's apparatus hatched a very fair number of chickens, but was too expensive ever to come into general use; and the same may be said of the elaborate incubator of M. Minasi, which is still used in England, but only to a limited extent. Probably, in fact, no invention the price of which is kept up by a patent will ever become extensively useful or popular.

For one of the most essential points of a good incubator we are indebted to M. Vallée, Poultry Superintendent of the Paris Jardin des Plantes. About the year 1845 this gentleman constructed an incubator which succeeded very fairly, hatching considerable numbers not only

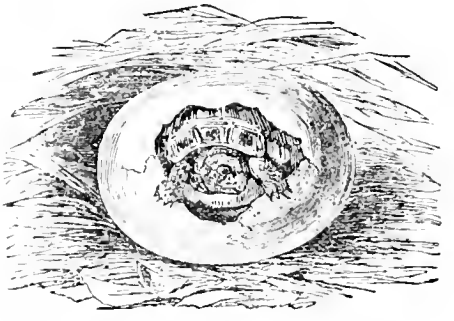


Fig. 28. Egg and Young Tortoise hatched in Vallée's Incubator.

of hens' eggs, but those of partridges, pheasants, and even reptiles; the hatching of a tortoise-egg in 1846 exciting a great deal of interest. We reproduce an engraving made at the time of this curious "hatch," from which it will be seen that the reptile made its exit at the side instead of one end of the egg—the drawing is of the exact natural size. M. Vallée finally improved his machine by the addition of a self-acting valve, by which the temperature was to a certain

extent self-regulated. This valve was by no means perfect in its action, but the idea was valuable, and has been adopted in all the best incubators of the present day, especially by Mr. Brindley in England, Mr. Halsted and the Messrs. Graves in America. A few of the best and most modern contrivances for hatching we shall now proceed to describe.

In Mr. Brindley's incubator, a series of pipes are led from a copper boiler, which is heated by a lamp carefully constructed to burn steadily, through a space bounded at the top and bottom by two horizontal plates of glass, which thus form a hot-air chamber heated by the pipes. The eggs are not however placed in this chamber, but in a drawer lined with felt which slides under it. The hot chamber is provided, as before remarked, with a valve, which can be balanced so as to open at any temperature desired, and within reasonable limits appears to perform its office pretty fairly. Receptacles are also provided to contain the chicks for the first day or two, after which they must be accommodated independent of the apparatus. In a few cases we have known this incubator give fair results, and it is within our own knowledge that Mr. Brindley himself hatched very successfully with it occasionally ; but it was not generally acceptable, and nearly all those we are acquainted with who do possess it now use it chiefly to hatch out finally chicks which are nearly due, and thus save them from being crushed by the hens, to whom they are afterwards returned. Mr. Jones, the well-known Spanish breeder of Bristol, nearly always hatches his chicks in this way, which is well worth the attention of any amateurs who may lose chickens from such a cause.

More successful upon the whole than the last described was the incubator invented by Mr. F. Schröder, manager of the now defunct National Poultry Company, and which is illustrated in Fig. 29. This incubator is circular in plan, and very compact ; indeed its general arrangements

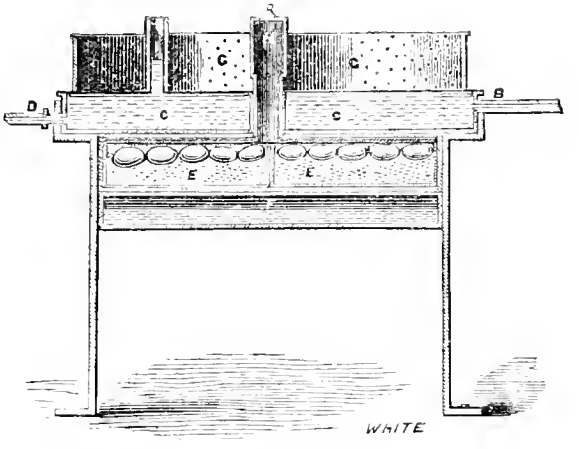


Fig. 29.

are worthy of study, in spite of the imperfection of several details. The hot-water tank, C, is connected with a separate boiler not shown in the figure, by two pipes, B and D, one being the inlet pipe and the other the outlet ; and is furnished with an open pipe, I, in which is immersed a thermometer to show the temperature. Under the tank slide the egg-drawers, E E, each of them the quadrant of a circle, all being open at the top, and the bottoms being formed of perforated zinc. A tube, H, which passes through the tank affords ventilation to all the drawers, the corners of which meet under it. Under all again is a circular tank, F, of cold water; and over the hot-water tank is a circular receptacle bounded by perforated zinc all round the apparatus, and floored with sand, both to confine the heat and furnish a home for the chickens till strong enough for removal. Curtains are provided all round to preserve the heat and guard in some measure against changes of temperature.

The chief merit of this incubator is the tank of cold water, which by its evaporation under the heat above, percolates gradually through the chaff with which the egg-drawers are lined, and preserving a moist atmosphere, renders any damping of the eggs unnecessary. The ventilation provided through the pipe H is also of value. The principal defects which strike us are, the absence of a regulating-valve, and the immersion of the thermometer in the tank, or *source* of heat, instead of being where it should be, in the drawer or chamber which is heated. The tank may preserve the same temperature, and yet that of the egg-drawers differ widely, according as that of the room rises or falls. Hence this incubator is more to be studied for the excellence of its general plan than copied in its various parts; and has never become extensively useful or popular, though cheaply made.

In 1866 Colonel Stuart Wortley, at that time an enthusiastic fancier, constructed an incubator on another principle, which we think will yet be found valuable. A sketch showing the idea clearly was published in *The Field* from a drawing supplied by him, which we reproduce in Fig. 30. D is a saddle-backed boiler, furnished with a dome, B, to collect all steam and allow it

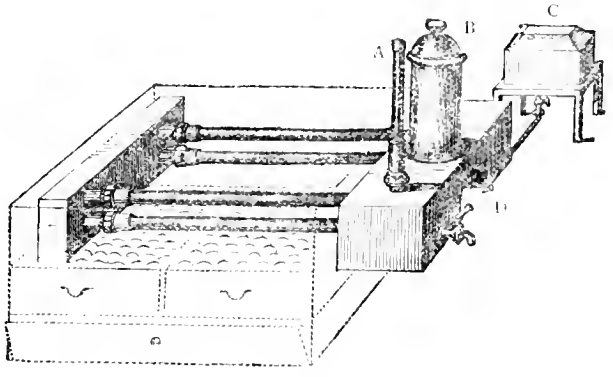


Fig. 30.

to escape, a supply cistern, C, by which the height of the water is kept uniform, and a glass gauge, A, to show the height at a glance. The water in the boiler is always kept *boiling*, and therefore circulates at an almost uniform temperature through the pipes which heat the egg-chamber. These pipes pass through holes furnished with spring-pads to keep them air-tight, and hence by pushing in more length of pipes there is greater heat given given for cold weather, or by withdrawing them a little the temperature may be reduced. The difference between this plan of heating and others will be readily seen; it gets rid of any variation so far as the *lamp* or other source of heat is concerned, as the laws of nature give a uniform temperature of 212° for boiling water at all ordinary pressures of the atmosphere. This is a great point, and changes of temperature are then guarded against by giving more or less of heating surface. The difficulty of providing a regulating-valve will readily be seen by all skilled mechanics, but we think might be overcome; and in that case we believe all the mere mechanical difficulties of preserving a uniform heat would be surmounted. We believe an incubator on this principle has never been made for sale. We know one firm to have experimented with it, but the practical difficulties we have hinted at have probably stood in the way of success, and the adaptation of a self-regulator to this principle of heating yet remains for some ingenious inventor. We certainly think the field a promising one, as the getting rid of lamp irregularities would be a very great point gained.

The most perfectly constructed incubator at present made for sale is probably that manufactured by Messrs. Jacob Graves & Co., of Boston, U.S. It is evidently founded upon, and indeed is

almost copied in many parts from the earlier model constructed by Mr. Halsted in the course of his experiments; but has been improved in several details and minor arrangements, and is without doubt a good machine, though still capable of improvement. This incubator is shown in perspective

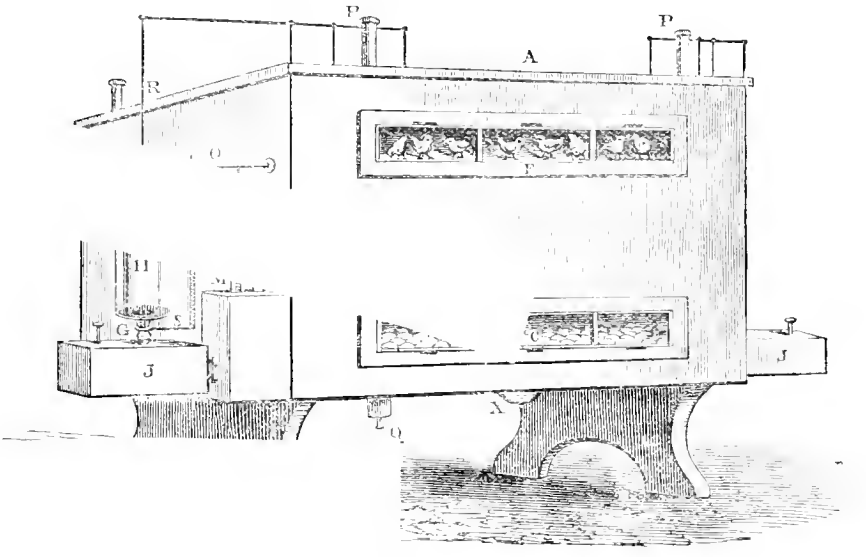


Fig. 31.

in Fig. 31, and a transverse section to show the interior arrangements more clearly is given in Fig. 32. At the bottom is a cold-water tank, B, and above this is the hatching-chamber, C, heated by the hot-water tank, D. Above this again is an air-chamber, E, for retaining or protecting the heat acquired; and on the top of all a drying-loft or nursery, F, where the newly-hatched chicks are placed after birth until removal to the separate "mothers" provided for them.

The mechanism of the incubator cannot be explained without constant reference to the diagrams. The lamp G heats the boiler H, which latter communicates by tubes shown at I I in the transverse section with the hot-water tank D. J J in the perspective view are simply reservoirs which

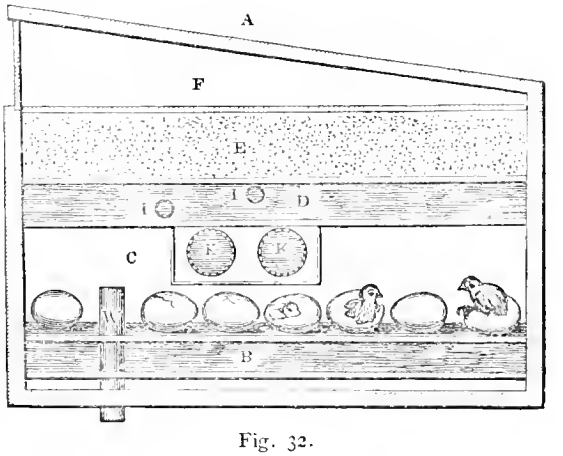


Fig. 32.

supply oil to the lamps. Under and in contact with the heating-tank run two glass tubes filled with alcohol, shown transversely at K K, and each of which at the outer end communicates by a bent tube, I., with a cylinder, M, containing mercury, and which is furnished with a piston-float and rod, N.

When, therefore, the temperature of the tank rises above that for which the valve is adjusted, the expansion of the alcohol in the tubes K K, acting on the mercury in the cylinder M, forces up the piston-rod N. The upper end of this rod is attached to a lever, O, which is pivoted on the machine, but moves freely at the outer end. Above, the free end of the lever is connected by a rod, R, with a valve, P, and below by a spiral spring, V, with the lamp G. When, therefore, the piston is raised, the valve P opens, and warm air rushes out to reduce the temperature; while Q is a slide at the bottom of the tube W to lower it still faster if so high as to make this necessary. At the same time this is being done the lamp-flame is being lowered by the ingenious mechanism shown in Figs. 33 and 34, which are enlarged views of the burner and its appliances. The tube or wick of the burner is shown

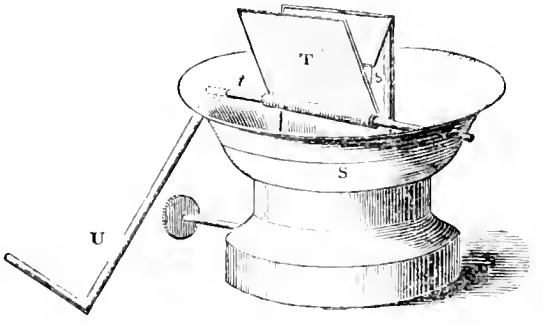


Fig. 33.

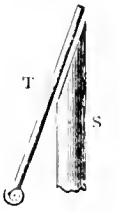


Fig. 34.

at *s*, and its orifice is beveled off at an angle. A little way off is pivoted on the shaft *t* a movable leaf or regulator, T, which in ordinary stands away from the wick, but is capable of shutting down close upon it, as seen at Fig. 34. From the end of the shaft *t* projects the lever U, to which is attached the spiral spring V as already described. By means therefore of the lever O and spring V, at the same time the hot air is allowed to escape by the opening of the valve P, the lever U is raised and the lamp-flame lowered by the shutting down of the flap T upon the tube of the burner. It should be mentioned that the wire R is not rigidly connected with the valve P, but has a sliding attachment, by which means the lever O is permitted the needed play even when the valve is closed or opened to its fullest extent; and also that the regulator T in Fig. 34 is adjusted so that the lamp can never be entirely extinguished, though it can be graduated from a full flame to a scarcely perceptible one. We may also say that all these parts are duplicate, there being a precisely similar lamp, boiler, valve, and other contrivances at each end of the apparatus, one of the tubes K in Fig. 32 communicating with each; and these two sets of heating and regulating apparatus to some extent correct and compensate any sudden irregularities for each other, and make the total effect more perfect and uniform. In fact, the Graves' incubator bears the character of being a thoroughly good machine, though in one or two respects we do not consider it equal to the improved model finally adopted by Mr. Halsted himself, and which is probably the most perfect apparatus yet constructed, though even in it we think some minor improvements might be made.

An outside view of the improved Halsted incubator is shown in Fig. 35. B is the boiler, heated by a lamp in the usual manner, oil for the lamp being supplied from the reservoir O. The lamp may be formed of any convenient material, and is in the apparatus from which the illustrations are taken of the German student-lamp pattern, but may be of any good construction which will burn equally. Only the best oil or other fluid must be used, or the wick will rapidly become so crusted that it will scarcely burn, and the heat of course fails. For this reason gas is manifestly preferable, where it can be obtained free from the danger of being cut off without warning.

D is the egg-drawer or nest, above which is the square tank which supplies the heat, a space of two inches being left between the tank and top of the drawer to allow room for the regulator. The boiler B is connected with the heating-tank by the supply and return pipes F and R.

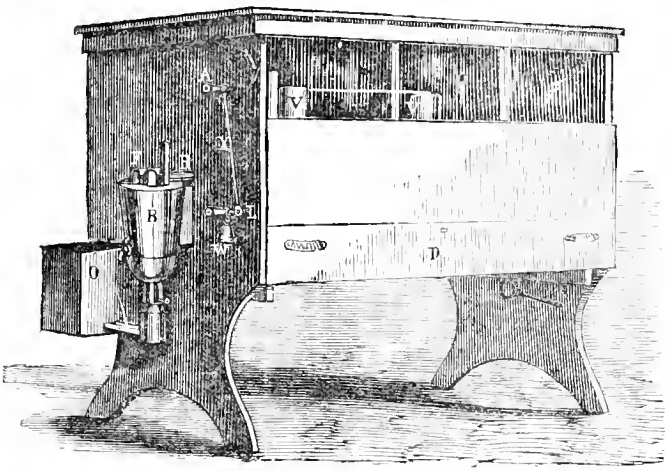


Fig. 35.

Figs. 36 and 37 show the construction and connections of the boiler and heating-tank. The lower part of the lamp chimney is one half of a sphere, resembling the lower part of a common bulged chimney. The top edge of this semi-globe or saucer, which is made of tin, fits against the bottom of the conical flue S which passes through the middle of the boiler and completes the chimney, opening into the atmosphere. The space between this flue and the outer case of the boiler is divided by a cylindrical partition or diaphragm, which reaches from the top to nearly the

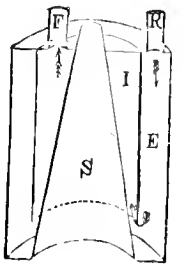


Fig. 36.

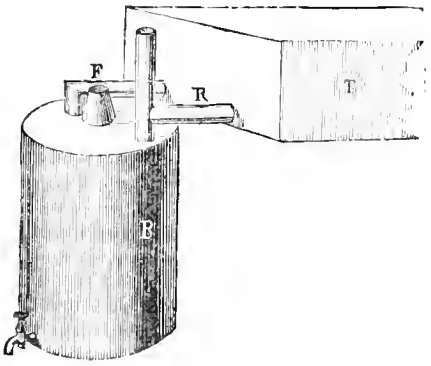


Fig. 37.

bottom; the supply pipe, F, being conducted from the inner and the return pipe, R, to the outer portion of the boiler. The effect of this is to keep up a constant and rapid circulation of the water in the direction of the arrows (Fig. 36.) The water from the tank passes first into the outer portion, E, thence under the partition into the inner portion, I, where it is rapidly heated and passes off again by the tube F into the tank, T (Fig. 37). The boiler is also furnished with a stop-cock to draw off the water when required.

Fig. 38 represents the boiler and tank in plan, for the sake of showing the arrangements, which, though simple, are of a very important character. The boiler, B, and flues, F and R, are

lettered as in the preceding figures, but it will be seen that the flue F branches, discharging the hot water at the end of the tank. Striking there the current is reflected, and passes round the outside of the tank, as it cools being drawn towards the centre, from whence it passes by the flue R to the boiler again. The object of this construction is to obviate a great fault in nearly all other

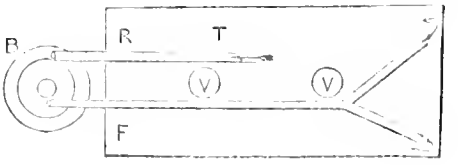


Fig. 38.

incubators, of the outer edges of the egg-drawer being much cooler than the inside; by this arrangement the middle of the tank is the coolest, and the heat is much more equalised. V V are tubes two and a half inches in diameter, passing through the tank, and open at both ends. The joints where they pass through the tank must be made perfectly tight, the object being to ventilate the egg-drawer, and also to let off the heated air when required into the top part of the machine, which serves as a chicken-nursery. If the apparatus be designed for a warm room, the tubes may go higher, so as to open into the outside air instead of into the nursery. They are also seen similarly lettered in Fig. 35, and are provided at the top with swing or pivot valves, the rod on which these turn being carried through the end of the machine and terminating with a lever as shown at A (Fig. 35), which is connected with the regulator by a rod, X. The tank is supported in its position two inches above the egg-drawer by a few battens or slips fastened to the outer case.

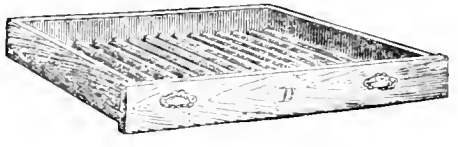


Fig. 39.

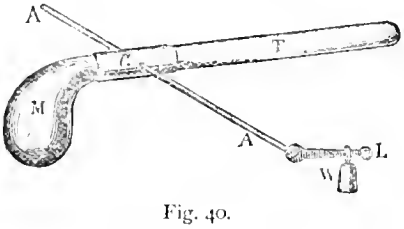


Fig. 40.

Fig. 39 represents the drawer or nest. This is in three parts: first the wooden box, the bottom of which is of slats or strips one and a half inches wide and three to five inches apart; next a galvanised iron or zinc pan, fitting snugly inside the box; and, lastly, a tray, fitting loosely inside the pan. This tray is constructed of strips of the same material of which the pan is made, bent like an inverted V and placed thus ΛΛΛΛ; these are placed upon three tubes or strips of the same, crossing at right angles and all soldered fast to them. The whole is then embraced within a band about two inches wide, furnished with handles at each end so that the tray can be lifted out. When using, a woollen blanket or cloth is laid on the strips, dropping down between each or every alternate strip, into or just touching the water with which the pan is filled to the depth of a quarter of an inch. This construction provides moisture, and also keeps the *bottom* of the eggs cool; the pan coming in direct contact with the outer air between the slats forming the bottom of the drawer. In this manner we get as nearly as possible the same effect as when a hen forms her nest on the damp ground in which case she is almost certain to hatch nine-tenths of her eggs. On this blanket the eggs are laid, the Λ strips keeping them in rows and preventing them from rolling about; hence the strips should be placed about one and three-quarter inches apart, measuring from centres, in order that the eggs may lie snugly between. In the front of the drawer is a small

hole, D, through which the tube of the thermometer is inserted, the bowl being in the drawer. There are only three points marked on the tube, 95°, 100°, and 105°. The drawer is held tightly in its place after being pushed under, by eccentrics, which force it upwards against the battens that support the tank.

Fig. 40 is the regulator. This is a glass tube, T, of about three-eighths or half an inch in diameter and eight inches long; at one end is a bowl holding half a pound of mercury. C is a brass cylinder one inch long, fitting over the tube T, and slid down as near the bowl as is possible, where it is secured by running a little plaster of Paris between it and the glass. To each side of this cylinder is fastened a brass wire one-eighth of an inch in diameter, A A, which should be joined to the cylinder as far back towards the bowl as possible, and forms a shaft on which the whole arrangement balances or turns, the shaft of course turning with it. L is a lever on the long end of the wire, and W a weight so connected that it may be moved along the arm of the lever. In making the regulator, the bowl of the tube is partially filled with mercury or quicksilver, and then placed in water heated to 100° Fahr. There must be enough mercury to fill the tube to the level shown in the cut, at that temperature, when the tube has the inclination there shown. Then increase the heat until the fluid rises and *fills* the tube, when the end is to be sealed hermetically. This should be done by some manufacturer of thermometers. Then place the "regulator" under the tank and near the centre of the drawer, supporting it by passing the wire A through journals or hangers. A stay must then be put under the end of the tube T so that it can never *quite* descend to a horizontal position. The end of the wire with the lever and weight is shown in the first illustration (Fig. 35) projecting through the end of the case, and connected by the rod X to the ventilating valves. To set the regulator, heat up the incubator to 103°, and then with the weight W *balance* the regulator. If the heat rises above that figure, the mercury rises in the tube, destroys the equilibrium, the tube T descending turns the shaft A, and by the lever L opens the valves. As the drawer cools the mercury recedes and the valves close. If desired the regulator can also be connected with the lamp, increasing or decreasing the flame as the heat of the drawer needs it.

The regulator of this machine, acting upon the balance system, is more delicate than the preceding, and we believe has been found in practice to be more reliable. The absorption of the water by the flannel in the egg-drawer between the strips V V is also a very valuable feature, and comes nearer to an imitation of Nature's process than anything previous which has been devised, while the whole is so simple that with the aid of a glass-blower to seal the regulator it can be constructed by any skilful mechanic. The arrangement of the chicken-nursery over the top of the whole machine, as in Mr. Schröder's incubator, is also convenient and useful; indeed, the water underneath and the ventilating shafts (in this case also employed for regulating the temperature), with the nursery over, show a great similarity as regards the main outlines of the two machines.

Such are the best incubators lately constructed. We believe we have omitted none containing any principle worthy of remark, and need scarcely say that the "cheap and simple" machines advertised at a very low price, and consisting only of a hot-water tank and drawer under, are practically worthless, unless the proprietor could remain constantly by the side of them to regulate the temperature. Excepting in trifling details of construction, perhaps a more perfect apparatus than the last can hardly be devised, unless, as we have said, a regulating valve can be combined with Colonel S. Wortley's plan of using water in the pipes at a regular heat of 212°, which we still think would be the best principle of all. There are however practical difficulties in the way, and either the Graves or the improved Halsted incubator, are quite perfect enough for all useful purposes if properly used. But in the *use* of all incubators the difficulties begin, and success can

only be attained by observing many minute precautions, which are as a rule quite overlooked by most at the commencement of their experiments. No valve can be absolutely depended upon to preserve a uniform heat through all vicissitudes, irrespective of personal supervision; and the lamp also will require sedulous attention. Years ago we wrote in the "Practical Poultry Keeper" that it was absolutely necessary the eggs for artificial hatching were *fresh*—not at the outside more than five or six days old; and all subsequent experience confirms this remark. In place, however, of entering further ourselves into this—after all the most important part of the subject—we shall now give a most valuable paper on the practical management of the incubator, by Mr. M. Halsted, of Rye, N.Y. Knowing, as all know who are interested in artificial hatching, the long course of patient experiments of which the incubator we have just described is the fruit, and that he had practically attained to a large measure of actual success, we asked him to give the benefit of his experience to the poultry-keeping community; and in kindly acceding to our request, and sending the following original paper and accompanying record, he has laid both them and ourselves under the greatest obligations, his observations containing more practical information regarding successful hatching than anything that has yet appeared. His remarks are as follow:—

"Comparatively few are successful in the use of incubators, and many really good machines have been thrown aside and pronounced worthless, when all the trouble has been want of proper management. My design in these notes is to give as concisely as possible my own experience and the results thereof.

"First of all it is necessary to thoroughly *test* the incubator. Do not fill the boiler and tank too full; allow for the expansion of the water under heat, remembering that it increases nearly a ninth part in bulk from 32° to 212° Fahr. Test the working of the regulator and ventilators; increase the heat up to 130° if a new machine, and then decrease it to 100°. Again increase to 103° (the proper heat), and strive to keep it at that temperature. The *range* is from 100° to 105°, neither above or below these points, except perhaps transiently. So soon as you have accomplished this result you may put your eggs in, not before. The eggs to ensure success *must be* perfectly fresh, not over *three* days old.

"During the first forty-eight hours I take the eggs out and cool them for five to ten minutes at least six times, and every six hours is better. If a gentle moisture is sustained in the egg-drawer they will need no other application, but if a dry heat it will be well to sprinkle them with tepid water when airing. The eggs should also be turned as often as twice in twenty-four hours, and oftener would be better. Do *not* during the first six days allow the heat to get *above* 103°. I would far prefer it to run at 102° than risk any chance of its exceeding the former point.

"During the second forty-eight hours decrease the periods of airing, but increase the time to fifteen minutes. The eggs are supposed to be aired in a room where the temperature is not *under* 55°.

"During the third forty-eight hours, air twice a day and turn the eggs at each airing. When turning the eggs it is best to change their position also, shifting those in the middle of the drawer towards the outer edge. Do not be afraid of handling the eggs. So long as they are not shaken or jarred there is no danger of their being injured.

"At the end of this period (six days) examine the eggs by candle or lamp light. Partially close the left hand, letting the thumb and forefinger lap; hold the egg between the thumb and two first fingers of the right, *under* the fingers of the left, and turn it slowly, between the eye and the light. If it is perfectly clear lay it aside; it is not fertile, and will not hatch. Fertile eggs will show a dark spot on one side, appearing greater or less as turned on either side of the line of vision.

At this stage the progress of incubation varies very much, some eggs appearing nearly half opaque and others with only a discernible spot. The novice must expect to sacrifice some eggs in acquiring this knack, and to that end it were better to put in twenty or twenty-five eggs expressly for experimenting upon.*

"This is the most precarious time during the whole process of incubation—the fifth, sixth, and seventh days. At this stage a heat of 106° will sometimes spoil a whole batch of eggs; while on the seventeenth day I have *held the heat at* 115° *for over two hours*, and yet hatched out seventeen chicks from twenty eggs. All fluctuation must be avoided if possible, the heat should be steady at 102° to 103°; the eggs aired twice a day, from fifteen to twenty minutes each time; and a slight but perceptible moisture maintained in the drawer. A *dry* heat is much more difficult to regulate, and much more dangerous to the life of the unhatched chick.

"After the seventh day a little more latitude may be allowed in the temperature without fatal results, but I would not be understood as *advising* it until after the tenth day, at which time the heat should be slightly increased, say to 103° to 103½°. From this time forth air the eggs once a day, leaving them exposed from twenty minutes to half an hour. During this period the moisture must be kept up, and if anything slightly increased; the object being now to keep the little prisoner in a healthy growing state, which cannot be done *without* moisture. Very many persons fail at the eleventh hour—the eighteenth or nineteenth day—from this cause. I will mention one case in illustration:—A gentleman living some eight miles from me, after seeing my incubator, constructed one himself from ideas of his own. It was made to hatch chickens on a large scale, holding about 1,000 eggs. He started with 500 eggs, and everything progressed finely until the sixteenth day; at that time he called on me and stated how well he was getting along, saying that he thought my practice of keeping a constant moisture *under* the eggs was a fallacy. He had commenced with it, but after the first week had given it up as too much trouble. I cautioned him about the result, but he expressed so much confidence, saying he had broken several eggs that morning, and all contained live chicks, that I concluded there was perhaps a show for success, and so told him. But on the twenty-second day he visited me again: he had not hatched a single chicken; all were dead in the shell, and all seemed to be full formed. A few of the eggs were pipped, but the outer skin was as dry and tough as a piece of parchment, and the poor chick was as hopelessly immured as if it had been enclosed in sheet iron. He was positive that the heat had not exceeded 104° nor been less than 100°; so the failure was attributable to no other cause (apparently) than lack of moisture. I can cite a number of just such instances which have come to my notice, and in all of them the failure was due to the same cause.

"One of the most essential requisites for success is *cleanliness*. One bad egg in the drawer will sometimes spoil every one in its vicinity during the second week of incubation; after that there is not so much danger. It will frequently happen that eggs will upon first examination be passed as fertile and yet prove bad. After the tenth or twelfth day examine the eggs closely every day, and if any exudation in the shape of drops of fluid or gummy matter be discovered on the eggs, remove the affected one at once.

"To show the variation of temperature the eggs will bear during the third week, I will give my experience at the fair of the American Institute, held at Empire Rink, New York City, in September and October, 1870. The place assigned me was on the north side of a room some 300 by 500 feet in size, and within about twenty feet of the receiving door. It was a great risk to attempt to hatch chickens in such an exposed place, but I accomplished it. Night after night the

* We have treated more fully on this part of the subject in the preceding chapter.

heat would fall to 95°, and in one instance it went to 89°. It was impossible to keep the heat up, although the incubator was covered and completely enclosed with heavy woollen blankets. Only four times did the heat get to 104°, usually reaching 102° by six or seven p.m., and then falling to 96° or lower during the night. The incubator was left at ten p.m., and not visited again until seven a.m. (This would be always my custom with any good self-regulating machine.) The eggs in this case were kept in my incubator at home until the twelfth day, and then taken to New York to the fair, a distance of twenty-five miles, by rail. I averaged about *fifty per cent.* in hatching on that occasion, and taking into consideration the constant fluctuation of temperature, this was unusually good success. For moving the eggs from one incubator to the other, I constructed a box, lining it with felt, and placing in the bottom a tank of hot water; then placing the eggs between several thicknesses of woollen blankets and closing the box tight. In one case, where a few eggs had been overlooked and left in the home machine until the twentieth day, I started from home with two of the eggs pipped; on my arrival at the rink, I found one of the chicks out and entirely free from the shell.

"I have been led by slow degrees to adopt the opinion that the great drawback to artificial incubation was the difficulty in getting through the first ten days. I noticed some years since that when a hen left her nest, and the eggs were fairly chilled, during the *early* stages of incubation, she rarely brought out any chicks, and usually those that did come forth were weakly, and pined away a few days or weeks of existence, and then dropped off; also, that even when eggs had been left for fully twenty-four hours during the latter days, they often hatched out well and strong.

"In support of this view, one of my neighbours, a perfectly reliable gentleman, gave me a remarkable instance. He had a large number of turkey eggs set under common hens; under one of the hens were some eggs of her own kind, probably laid to her by one of the fowls roaming over the place (they not being confined in a setting-room). These hen's eggs hatched, and the mother left the nest with two chicks, leaving ten turkey eggs about twenty-three or twenty-four days incubated. When found the eggs were cold and supposed spoiled; no further notice was therefore taken of them until two or three days after, when a hen was found to have taken possession of the nest and assumed the duties of incubation. Some days after, to the surprise of all, she came off with *seven* turkey chicks, all strong and well. This was in June, warm weather. Since then I have experimented with eggs, and have demonstrated to my own satisfaction that eggs can be, at certain stages of incubation, deprived of heat for twenty-four to *seventy-two hours*, and yet be hatched! In fowls this period would seem to be between the sixteenth and seventeenth days; in turkeys, the twenty-first to twenty-third days, perhaps even later. The exact time I have been as yet unable to determine.

"My experience with this led me to try placing the eggs under hens during the first few days of incubation. I have found even three days under hens before placing in the incubator a great benefit, but seven to ten days is much better, and one reason I believe to be the following:— If my reader will notice an egg after having been under the hen for a few days, he will observe it to have a *polished* appearance, as if *oiled* and *rubbed*. There seems to be some oily secretion on the feathers or on the body of the hen, which, with her action in moving the eggs, produces this appearance. Eggs thus treated seem to retain the moisture or watery portion of the contents much longer than perfectly fresh ones; hence it would seem that the 'greased appearance' prevented or rather retarded evaporation. An egg placed at first in the incubator and left there the same length has not this appearance, being as fresh to all outward seeming as if just laid. To establish this fact of evaporation, I took eggs of equal weight and placed some under hens and

the rest in the incubator, subjecting the latter to a dry heat. At the end of three days there was a discernible difference, and at seven days a very marked difference in the weight; at ten days there was *over half an ounce* difference in their respective weights. It is in consequence of these discoveries that I so strongly recommend the constant application of moisture during artificial incubation; and knowing how easy it is for a novice to overdo or come short in the matter, I recommend the use of hens for the first seven to ten days.

"It would be very easy to give a page or more of directions 'how to manage an incubator,' but all the written directions in the world will not give some men success. Nothing but experience, and that bought with many failures, will teach them the *little* attentions necessary to ensure success. I have striven to give these plainly, and if any of my readers are benefited by it my labour will not be lost. I add a table or record of daily temperature and remarks as jotted down by me during a few weeks of successful operation."

REGISTER OF INCUBATOR.

Date.	Mercury. 6 A.M.	12 N.	6 P.M.	10 P.M.	Open Air, 6 A.M.	REMARKS.
1869.						
April 13	—	—	—	—	—	Started heat in incubator at 1 P.M. At 10 P.M. mercury marked 115°. Turned down lamp.
,, 14	98°	104°	102°	100°	38°	
,, 15	97	101	102	104	40	Small leak under tank. Put in half an ounce of Indian meal.
,, 16	100	101	104	102	37	Leak stopped. Lamp burning evenly. Trimmed twice.
,, 17	101	103	103	102	40	Put in twenty eggs.
,, 18	101	102	103	103	42	
,, 19	102	102	103	102	38	Raw cold day. Wind east. Turned eggs three times.
,, 20	101	102	102	101	41	Filled lamp. Trimmed twice daily. Turned eggs three times.
,, 21	100	102	102	102	43	
,, 22	101	101	101	102	42	Put in twenty-two eggs.
,, 23	102	103	103	102	45	Examined first lot of eggs; found five unfertile.
,, 24	100	102	103	102	44	Turned first eggs only twice daily.
,, 25	101	102	102	102	51	Replenished water in egg-drawer.
,, 26	102	102	103	103	48	Put in twenty-six eggs. Refilled lamp.
,, 27	100	101	102	102	42	Changed blanket under eggs.
,, 28	101	102	103	103	48	Examined second lot of eggs. Three unfertile. Turned two.
,, 29	100	102	102	102	40	
,, 30	101	103	103	103	46	Found one bad egg in remainder of first lot.
May 1	102	103	102	103	50	Put in fifteen more eggs.
,, 2	103	103	103	104	55	Examined third lot of eggs. Four bad. Changed blanket under eggs. Refilled lamp.
,, 3	102	—	—	102	51	Absent from home. Examined third lot in evening. Four bad.
,, 4	102	103	103	103	48	Replenished water in egg-drawer.
,, 5	102	103	103	102	47	Put in thirty more eggs.
,, 6	101	102	103	103	52	Changed blanket.
,, 7	102	102	103	102	51	Two eggs pipped at 12 noon. Both out at 6 P.M. Three more pipped.
,, 8	102	103	103	103	54	Thirteen chicks from first lot, and one dead in shell. Refilled lamp. Examined fourth lot of eggs. One bad.
,, 9	101	102	102	103	52	
,, 10	102	103	103	102	50	Examined fifth lot of eggs. Three bad.
,, 11	102	103	103	103	55	10 P.M. three eggs pipped.
,, 12	101	102	103	104	51	6 A.M. five chicks out, eight more pipped, and all out during day.
,, 13	102	103	103	103	57	Four more chicks out, seventeen in all. Two eggs bad. Put in twenty more eggs.
,, 14	102	103	104	103	60	Refilled lamp. Changed blanket. [eggs in tepid water.
,, 15	101	103	102	101	57	Bad egg broke in drawer. Took everything out, changed blanket and water, washing
,, 16	101	—	—	104	—	Absent from home. No record of out-door temperature. Found six chicks out, and several
,, 17	102	103	104	103	60	Eighteen chicks out. Two partly out, which I helped. One egg pipped, but dead. One egg bad. [eggs pipped 10 P.M.

In these practical notes, by a gentleman who has devoted more patient study to the subject of artificial hatching than any one else now living, we have perhaps the nearest to a real "guide to success" which can possibly be given, and all interested in the matter will feel under obligation to Mr. Halsted for thus freely imparting the final results of his long experience in this hitherto disappointing field. The unpretending record with which he concludes will give quite sufficient authority to the practical instructions which precede, and conclusively proves that success is within the reach of all who will deserve it. About seventy-five per cent. of chickens from fertile eggs is perhaps as much as can be counted on even from hens, taking into account all the chances and casualties of the natural process; but his own detailed directions form the best corroboration of our own statement many years ago, that merely to purchase an incubator and expect to hatch eggs with it can only result in failure, and that "by constant and careful attention to these minute details, and *thus only*, success in hatching can be attained."* That he is correct in supposing the early stages to be the most critical time in the life of the egg we are from our own experience fully convinced, having repeatedly noticed, as stated in our last chapter, that half an hour's absence is sufficient to chill or addle eggs at the commencement of incubation, whereas later on some hours may frequently be borne without injury. It is the more important to recur to this fact, as the contrary has been stated even by some who, without much real knowledge, assume to be authorities on poultry matters. Our own experience would lead us to conclude that occasionally, at least, this comparative immunity extends up to the very end of the period; but perhaps the one instance we quoted (page 49) is hardly sufficient to form a general conclusion. We are however thoroughly satisfied, from repeated and costly personal experience, that the idea so commonly conveyed in works on poultry, of long absence of the hen during the first few days being less fatal than later on, is an entire fallacy, and that after at most twenty-four hours' incubation, greater care needs to be exercised than at a later stage. The suggestion as to the greasy and polished appearance of the eggs after a while having something to do with the preservation of vitality, we believe to be well-founded. By dipping such eggs in water, after say ten days have elapsed, the existence of a film of oil will be made evident to any one; and we think it possible that by periodically rubbing the eggs in an incubator with a cloth *very* slightly oiled, the same object might to some extent be secured of preventing evaporation from within. At all events, the success here actually recorded proves conclusively that artificial hatching is a perfectly practicable thing, but that it is only by the careful *study* of Nature in the first place, and afterwards by faithful imitation of such apparently trivial details, that such a desirable result is to be achieved. The incubator cannot be merely played with; and just in proportion to the amount of honest faithful *work* bestowed upon it will be the measure of success attained.

Just as this chapter is going to press, we have received from Mr. L. Wren, of Lowestoft, some memoranda respecting experiments made by him, and not yet completed, but which have held out very encouraging prospects of success in the same field. In this case gas has been the source of heat employed; and Mr. Wren, with the assistance of a skilful mechanic, has perfected a regulator of the very simplest character, but which effectually secures uniformity of temperature within the limits of at most two degrees under any circumstances. The incubator itself employed in these experiments is not specially constructed, but is one of the simplest kind, sold by a manufacturer for £2 10s. Nevertheless, of the first four eggs put in the incubator, three were successfully hatched, and are doing well. In the second batch, the experiment was made, in accordance with a theory held by some, of *reducing* the temperature several degrees after the first ten days; and after

* "Practical Poultry Keeper," p. 211.

Mr. Halsted's minute directions to somewhat *raise* it at this period, we need hardly say this lot altogether failed; none of the chicks having properly absorbed the yolk for want of sufficient heat. Of the third four eggs, one hatched, and this is the last trial the result of which has reached us. We add a few of Mr. Wren's own notes, as they are both interesting, and may be practically useful to other experimenters in the same direction.

"My conclusion is that the heat should not be more than 102° for the first ten days; after that should not fall on any account below it, but be rather higher, and with *plenty of air*. In this I feel sure we are imitating Nature; because a hen when she first commences to sit has feathers between her body and the eggs, which are non-conductors of heat. By the friction of the eggs these wear off, and her body comes in direct contact with the eggs; therefore the heat must, if any difference, be rather greater the latter part of the time. The four eggs that hatched so well were in the incubator from the first, and were kept at from 102° to 104°, with plenty of fresh air several times a day. Instead of damping, a small vessel of water was placed in one corner of the egg-drawer.

"I may add that it is very easy to be deceived as to uniformity of temperature. In my first experiments I laboured under an impression that the temperature had not varied one degree, because in the morning I found the heat the same I had left it at night; but when I put in a registering thermometer, I found it had varied six degrees during the night.

"While I think that the first ten days under the hen is the most critical period as to the danger of a chill, I do not consider it so in the incubator, only so far as *requiring a more uniform temperature* and *not allowing it to exceed* 102°. I have found that at that stage 106° continued for a few hours will destroy the vitality altogether.*

"I think I have learnt more by my failures than by my first success. The reason of the latter I believe to be, that during the incubation of the first eggs I was continually making alterations, and sometimes the drawers were out and the incubator stopped for half an hour several times a day; consequently they got more air than those put in since. I have also examined the eggs under a *sitting hen*, and made the following memoranda of the position of the eggs during a part of one day:—

> "At 10.30 a.m. marked four eggs, and left them in the centre of the nest.
>
> "At 1.30 p.m. three of the marked eggs were moved to the outside; one still left near the centre. Marked three more, and left them in the middle.
>
> "At 2.45 p.m. the three marked last were moved to the outside, also the four marked first were still on the outside. Marked four more, and left them in the middle.
>
> "At 4 p.m. the four marked last were on the outside, and some of those marked first were back again to the middle of the nest.

"This I think proves that a hen is continually moving her eggs to the outside, so that they obtain fresh air; and my future experiments will be directed to supply the eggs in the drawer with a certain amount of air continually."

Mr. Wren adds that the first four eggs which hatched so successfully were Brahmas, while the others were Hamburghs; and as under the hens at the same period he found his Brahmas

* This paragraph was written in reply to a communication from ourselves embodying Mr. Halsted's experience as to the importance of the first ten days. The words italicised are remarkable; since, while the writer supposes he disagrees with Mr. Halsted, in reality his own observations exactly corroborate him.

hatch well, while the Hamburghs, though fertile, only hatched about twenty-five per cent., he thinks that may have something to do with the failures. It is however right to remark that Hamburgh eggs generally hatch better than any except Houdans.

It will be seen that, by experiments quite independent of Mr. Halsted's, Mr. Wren has established the fact that at an early stage a temperature of 106° will *kill the chicks*, and this alone will account for a large number of failures. His communication is also valuable for the positive information as to the manner in which a hen moves her eggs: that she *did* move them has long been known, but so far as we know, no positive information as to the extent of her manipulations has been previously obtained. Finally, the agreement of the English with the American experimentalist as to the absolute *necessity of fresh air* will not fail to be noticed; and in any incubator constructed for the future it would be well, we are convinced, to secure more free ventilation than has hitherto been provided. Be this as it may, the above valuable communications do, in their remarkable agreement, arrive at something like positive knowledge upon the subject, besides proving unquestionably that where regular and intelligent attention can be given, hatching by this means is now perfectly within reach, whatever may be said by some who mask their ignorance of the whole matter by an easy ridicule. At the same time, after what has been stated, we need hardly repeat that success is not *easy*, and can only be enjoyed as the reward of a care and attention which perhaps can be bestowed upon the matter by comparatively few.

As a help to the fancier, however, the incubator may be made invaluable. In an article published in the American *Standard of Excellence*, Mr. Halsted writes of it that "its great use and help is in *finishing* what the hens *begin—i.e.*, set your eggs under the hen, and at any time after ten days' incubation remove them to the machine. You can then put another setting of eggs under the hen, and in fact three or four settings in succession will not injure her. By this process your eggs are almost certain to hatch; your chicks come out strong and healthy, free from vermin and disease; none are trod to death in the nest; and none are left by the hen and chilled before fairly dry." We have already said that we know several fanciers who do the final hatching of the greater part of their chickens in this way; and the above suggestion, which only carries the idea further, and is perfectly practicable, may be unhesitatingly recommended.

In this chapter we can perhaps most properly mention the hatching by means of hen turkeys as carried on in France by the *couveurs* or professional hatchers, differing as it does considerably from the natural mode of procuring chickens. The best description of this method of management is contained in Mr. Geyelin's report to the Directors of the then existing National Poultry Company, and dated July, 1865. "This system," Mr. Geyelin says, "may aptly be called a living hatching-machine, and, in my opinion, it is the very best and cheapest way of hatching, as will be seen by the following description:—The hatching-room is kept dark, and at an even temperature in summer and winter. In this room a number of boxes, two feet long, one foot wide, and one foot six inches deep, are ranged along the walls. These boxes are covered in with lattice or wire-work, and serve for turkeys to hatch any kind of eggs. Similar boxes, but of smaller dimensions, are provided for broody fowls. The bed of the boxes is formed of heather, straw, hay, or cocoa-fibres; and the number of eggs for turkeys to hatch is two dozen, and one dozen for hens. At any time of the year, turkeys, whether broody or not, are taught to hatch in the following manner:—Some addled eggs are emptied, then filled with plaster of Paris, then placed in a nest; after which, a turkey is fetched from the yard and placed on the eggs, and covered over with lattice. For the first forty-eight hours she will endeavour to get out of her confinement, but soon becomes reconciled to it, when fresh eggs are substituted for the plaster

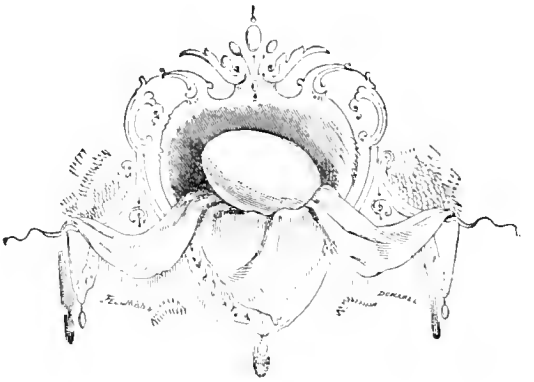
of Paris ones. They will then continue to hatch, without intermission, from three to six months, and even longer; the chickens being withdrawn as soon as hatched, and fresh eggs substituted. After the third day the eggs are examined, and the clear eggs withdrawn, which are then sold in the market for new-laid; but as they may be soiled or discoloured from having been sat upon, they clean them with water and silver-sand to restore their original whiteness. The turkeys are taken off their nest once a day to feed, and to remove their excrements from the nest; but after a while they cease self-feeding, when it is necessary to cram them, and give them some water once a day.

"Amongst some places I visited, in company with two of your shareholders, may be mentioned the farm of Madame La Marquise de la Briffe, Chateau de Neuville, Gambais, near Houdan, where we observed twelve turkeys hatching at the same time; here, also, we witnessed the rearing and fattening, which will be alluded to hereafter. In another place, that of M. Auché, of Gambais, a hatcher by trade, we observed sixty turkeys hatching at the same time; and we were informed that during winter and early spring he had sometimes upwards of one hundred hatching at the same time, and that each turkey continued hatching for at least three months. At the farm of M. Louis Mary, at St. Julien de Faucon, near Lizieux, in Calvados, I saw a turkey that was then sitting and had been so upwards of six months. I was informed that it was of great economical advantage to employ turkeys to hatch, as they eat very little and get very fat in their state of confinement, and therefore fit for the market any day."

The turkeys are also successfully employed for foster-mothers, as also are capons. "When a turkey has been hatching for some months, and shows a disposition to leave off, a glassful of wine is given her in the evening, and a number of chickens are substituted for the eggs; on waking in the morning she kindly takes to them and leads them about, strutting amidst a troop of *seventy to one hundred* chickens with all the dignity of a drum-major.

"I feel in justice bound to say," says Mr. Geyelin, "that these artificial living protectors are most efficient to shelter chickens in the day-time, and in the evening they are placed with their charge in a shallow box filled with hay, from which they do not move till the door of the room is opened next morning. I must not omit to mention that the chickens are not entrusted to the mother or a leader before they are a week old, and then only in fine weather."

The use of turkeys to hatch and foster chickens is not likely to make any very great progress in England till poultry-rearing has become a much more extensive branch of national production than it now is. Should this ever occur, the French method of hatching must of necessity receive attention, and will probably be adopted to a considerable extent amongst ourselves.



CHAPTER VI.

THE MANAGEMENT OF CHICKENS.

CHICKENS should have no food whatever for at least twelve hours after hatching; they not only derive no benefit from it, but we are more and more satisfied are actually the worse. We saw in Chapter IV. that at their entrance into the world they are provided by nature with the yolk of the egg, almost entire, for their immediate sustenance, and this is the only food they either need or ought to have. Even twenty-four hours' abstinence will not have the slightest prejudicial effect, but any time between which occurs conveniently may be chosen for the first meal, and till that time arrives it is best if they can be left with the hen entirely undisturbed. Many persons take away those first hatched and put them in flannel by the fire, restoring them to the hen when all are out; and if the eggs have varied much in age this procedure becomes a necessity, as the staler eggs not hatching till hours after the others, the hen would become too restless to remain with them were the earlier chicks left with her. But it is *better*, if it can be done, to leave the chicks with their mother; the heat of the living body appears to have an actually nourishing or *vital* power which no artificial warmth can possess, and when the little creatures have been under a hen, they never seem so happy and contented away from her. It is however necessary to visit the nest now and then, and to take away all the empty egg-shells, which otherwise cause great discomfort to the chickens. Dead eggs there should be none, all in which vitality has perished having previously been removed as directed in Chapter IV.

Perhaps as good a plan as any, with regard to convenience of attending to the chickens when hatched, is to set the hen at night, when the chicks should be due about the same time, or in favourable circumstances during the afternoon. Then at night the nest can be examined, shells removed, and the hen fed upon her nest, after which she is sure to remain quiet the whole night, and may be shut in until the morning. Any eggs not hatched then may be suspected; and in the great majority of cases all the chicks will be strong and lively, quite ready for their first meal. If only one or two eggs be still overdue we should not ourselves wait longer for them, as such very rarely thrive, and it is a great pity to run any risk with the healthy portion of a brood for the sake of a few weakly ones which may probably die after all. We speak from experience when we say that such is literally "throwing good chickens after bad." If an incubator or another sitting hen be available, it is of course easy to provide for the remaining eggs in this way; if not, and the brood was a fair average, we would sacrifice one or two rather than endanger the rest.

The first food of young chicks should consist of eggs boiled hard and chopped up, mixed with double its bulk of bread-crumbs, and the whole slightly moistened with milk. The hen also should be allowed to partake of this, giving her first, however, as much barley and water as she chooses to partake of. Hens are generally ravenous when the long period of seclusion is over, and to *fully* satisfy them with good grain at the outset saves both food and much restlessness afterwards; for we never like to see a hen debarred the delicacies her chickens partake of during the first week or two—she *needs* them nearly as much as they do, being in very poor condition in almost every case. After a week or two, on the contrary, it is better to put the food for the young

stock out of her reach, and only to feed the hen at stated times, else the choice morsels will tempt her to eat too much, and lead to that fattening which is always to be avoided by the poultry-keeper.

We need scarcely say that the practice formerly so common of removing by the thumb-nail the sharp and horny scale which is found on every newly-hatched chicken's beak, and by means of which it breaks the shell, is simply the barbarity of ignorance. Except in very rare cases of excessive debility, to open their beaks, and put either pepper-corns or food down their throats, is little better. If anything "comes naturally" to animals of every kind, it is the faculty of *eating;* and to attempt to "teach" this to creatures in ordinary health and spirits is somewhat akin to the instruction of an elderly relative in the art of oval suction. Chickens generally eat very little, and often drink nothing at all during the first day; and provided they be only fairly strong upon their legs, and look tolerably lively, they both may and should be left to their own natural instincts alone. Only in case of valuable chickens showing great debility may they be put apart to be tempted by special delicacies, or a little raw egg beaten up with brandy be administered through a small glass tube. For all weakly chickens, raw egg beaten up alone or with milk, or mixed with their food instead of milk, is the most strengthening thing that can be given. A little underdone meat chopped fine is greatly enjoyed by all chickens, and is of very great benefit to them.

We formerly used to give the first meal on the nest, but now prefer to put the hen out with her brood, when the family can be fed with cleanliness and comfort. Something however will depend upon circumstances, and if the weather be very wet or cold, and the hen cleanly in her habits, it

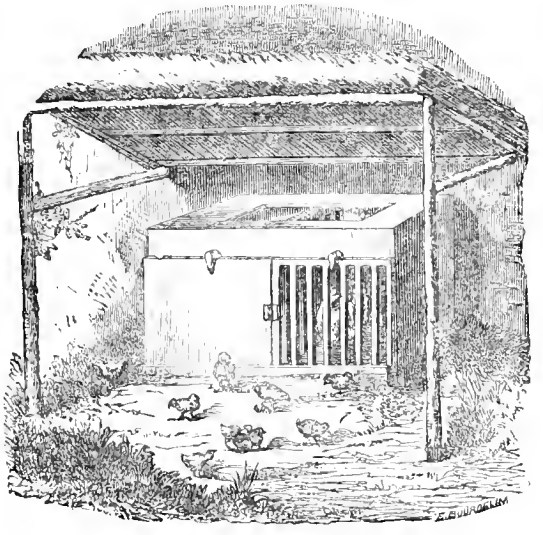


Fig. 41.

may be well, by regular feeding and shutting her in between, to keep her on her nest for one day till the chickens are better able to bear the cold. But as a rule the whole should be at once moved out; and where there is convenience for it, there is no better arrangement than that given by M. Jacque, and represented by Fig. 41, of a box-coop under any kind of shed, however rough, that can be most readily constructed or made available. The coop as figured by M. Jacque consists of two compartments, separated by a partition of bars; one compartment being closed in front, the other barred like the partition, and each set of bars having one loose or sliding one to serve as a door. Each half of this coop should be about two and a half feet square, and may

be lighted at the top by a small window. It is much used by the best poultry-breeders in some parts of France, and the advantage of it is that even in winter no further shelter is required; as at night the hen is secured in the inner compartment, and the outer, being closed by a piece of canvas, forms a feeding apartment for the morning, the chicks being prevented by the canvas from going out into the cold air. Such coops may be either constructed without a bottom, in which case the earth under must be removed and replaced with fresh every two days, or may have a board floor, to be thoroughly cleansed and sprinkled with sand or dry earth daily.

There should if possible be a grass-plot in front of the shed. Chickens can be reared without it, as we have proved by experience for years; but nothing is so much in favour of growth, appetite, and vigorous health as even a small grass-plot, where it can be obtained. If this great advantage cannot be had, the best substitute is the liberal use of fresh grass, cut into small green chaff with a pair of shears, and both mixed with all the soft food and thrown down by itself, when it will be eagerly devoured. The broods cannot have too much of this, so long as it is eaten and not left to be trodden into the ground; and such free use of grass is the most certain preventive of diarrhœa. Such a statement may surprise many; but while the sudden use of green food after deprivation of it does undoubtedly cause severe disarrangement, the constant and regular use of grass has on fowls the contrary effect. If even grass cannot be had, lettuce chopped very fine is the best substitute, but grass is much to be preferred.

In fine weather, when the winds are not too cold, the well-known wicker chicken-coop will often be found useful, from the facility with which it can be moved from place to place. It is, however, necessary to provide shelter from the sun and occasional showers, which can be done by covering with a handful of straw or a piece of canvas, and the whole should have a tolerably heavy stone placed on the top to prevent the hen dragging it about and possibly fighting with her neighbours. But, upon the whole, wooden coops made with a gable top are much the best. They should be boarded at the back and sides, and for a few inches each corner at the front, by which means the chicks can always find some shelter, whatever be the direction of the wind. The floor should be daily cleansed most thoroughly with a scraper, and afterwards thickly sprinkled with clean sand or gravel if obtainable, with dry ashes or earth if not. A board about as long as the width of the coop, and nearly a foot wide, should be laid on the ground close up in front, on which the food and drink are to be placed, where they cannot be trodden upon by the hen. With such a coop, in tolerably mild weather, the hen may often be left out all night, propping up the feeding-

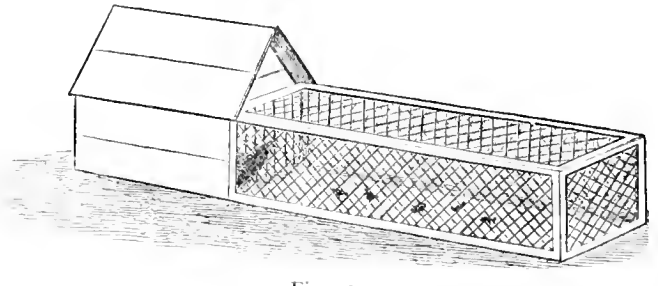


Fig. 42.

board (which can in fact be hinged at the bottom if preferred) so as to confine the chicks and keep out depredators, and putting a small fountain and some grits inside to provide an early meal. We have often thus managed in favourable seasons, and rarely lost a chick by it.

The principal enemies of the poultry-yard must have a chapter to themselves, but cats are such special enemies to chickens that we may in this place profitably describe the enclosed chicken-

run, by which their depredations may be defied. Such runs are made in an ornamental form by various manufacturers, but unless too small to be of service, are far too expensive for general use. Our own method, when some years ago compelled to adopt them, was as shown in Fig. 42, where such a run is represented affixed to the ordinary wooden gable coop already described, and is constructed by stretching inch-mesh wire netting, two feet wide, upon light wooden frames two feet wide by about six feet long, with a shorter one three feet in length; or the frames may consist of stout galvanised wire if preferred. The hurdles thus formed may be lashed with string so as to form runs of any size required, and are closed in with one or more similar hurdles on the top, the latter however being, for cheapness, constructed of two-inch mesh netting. Such an enclosed run is absolutely proof against any kind of animal depredators, and in some situations may save much care and anxiety for the safety of the young brood.

Cooping the hen with her chickens has been condemned as an evil by some who have written on the subject without much practical knowledge, and who have alleged that the "natural" plan of allowing her to wander at will with them is to be preferred. We have tried both ways, and assert without hesitation that this notion is altogether a fallacy, and that a brood placed with a hen properly cooped, with a moderate and fresh grass-run, well sheltered if possible by a few shrubs, and regularly supplied with suitable food, will thrive better and grow much faster than if left at liberty. Game and Hamburghs, in which size is no consideration, may be exceptions perhaps, and do well with free range: but nearly all hens over-tire their chickens if left to their own discretion; and from this most chickens suffer severely, besides being often surprised by showers where there is no adequate shelter. Our own practice latterly has been to give the hen about an hour's liberty some convenient time during the day when the weather is fine—in the afternoon is perhaps best—and in her absence to have the floor or ground thoroughly cleaned; this does all parties good, without the evils of unrestricted liberty.

After the first day or two the chopped egg and bread-crumb will have to be discontinued, and the chicks placed upon a regular diet. For this nothing can surpass the ground oats already described in Chapter III., the only objection being that it is almost too clammy, being so finely ground, for their tender beaks. This drawback can be easily removed by adding a little sharps or middlings and Indian meal, to impart a more crumbly character. Next to ground oats stands oatmeal, rather coarsely ground, and mixed with about one-third of barley-meal. The addition of the last is rather important, oatmeal alone being rather too dry—at least we have never found our chickens fledge so kindly on oatmeal by itself as when mixed with a little barley or bread-crumbs. The latter food is perhaps too expensive for ordinary market chickens, and every purpose of good and rapid growth may be obtained by feeding on a mixture of equal parts sharps or middlings and barley-meal. The grass mentioned in our last page must on no account be forgotten, unless a plot makes it unnecessary.

For a little time at least the food should be mixed with milk instead of water, and a little meat of some kind be given every day. For early chickens, new milk warmed, given to drink early in the morning, has a wonderful effect in bringing them through cold weather, and they get very fond of it; but neither this nor the food must be left so long as to become sour, which it will soon do, and if so cause serious trouble. The longer such food and delicacies can be continued the better; but for market chickens it is often too expensive, and the plain food already described, with a grass-run, will answer every needful purpose.

After a few days at most, some kind of grain must be given in addition to the soft meat, or the gizzard will not have healthy exercise. Even the first day some whole grits chopped up with a knife will be greatly relished, and the day following may be given entire. For a week or two this

may be varied with canary or crushed hemp-seed; but as the little beaks become stronger coarser grain may be substituted, in the shape of cracked wheat or barley, bruised oats, or buckwheat. The last is that best liked by chickens of all the cheap grains, and they will eat it freely at a fortnight old. For the reasons given in the chapter on feeding fowls, the last feed at night should consist of some kind of grain, and a little may also be left for the brood to partake of in the morning before any one is up to attend to them; for chicks are early risers and have good appetites. In summer they will be thoroughly awake at four o'clock, and if fed even at six, have had two hours of hunger to endure, which is prejudicial to their growth and happiness.

This leads us to the one great secret of success in rearing fine chickens, which we may sum up thus:—Give food so as to *fully satisfy* their appetites, and no more. This rule, it will be seen, is quite different and far more liberal than that we have laid down for adult fowls. It is broken if the chickens are left so long as to really *hunger* for their food; it is equally broken if so much is given as to be left after the brood is satisfied. Just so much is to be thrown down as will be fully cleared away, leaving none to be trodden into the ground. In the first week every two hours will do, then for a month every three hours, and after that four times daily, for the times of supply; but something will depend upon the season, and in early spring they will need to be fed more frequently during the early stages of growth, and also require better diet, which last will however be compensated by the better prices obtainable in the market. We would, however, say unhesitatingly that we do not approve of custard, so much recommended by some who pass for authorities, as food for young chickens. We never found they were the better for it, expensive feeding as it is; and we *have* found chickens fed upon it sometimes refuse plain wholesome food, and ultimately to become disordered in the liver. For the sake of those who wish to try this diet, we may state that the custard is prepared by beating up an egg in about a quarter of a pint of milk, and putting it in a saucer on the top of a stove to set, when it may be chopped up and given to the chickens. At ordinary seasons, mixing all the food with plain milk and giving a little meat daily is infinitely more wholesome diet, and the only circumstances under which custard should be given are when valuable chicks show marked debility, or in January or February. At such times, if preferred, the chicks may be fed with it by candlelight about ten o'clock at night, when they will eat it greedily, while being given thus only, it will not cause them to refuse plain food during the day. Thus used, and thus alone, custard is of marked benefit in aiding the growth of early chickens; but its cost must confine it to "fancy" or prize poultry. In the country, where milk is cheap, a good substitute for it may be found in curd, formed by adding a little alum to a quart of new milk, and squeezing the curd very tightly in a cloth, to make it as hard and dry as possible, in which state it is eagerly devoured by the chickens.

We have already spoken of the great importance of dryness in rearing chickens. Many breeds will endure with impunity very severe cold; but none can withstand damp under foot, which always issues in cramped feet. It is best, if cramp be evidently approaching, to remove the hen and brood to a board floor within the house, well sprinkled with sand. Prejudicial as a wooden flooring is when permanently employed, a few days' removal to it in such cases is of marked benefit; but before being again placed out, the dampness which first caused the ailment must be removed. The treatment of cramp when fully developed will be given in treating of diseases.

At a period varying from four to ten weeks the hen will discard her young charges; and at this time they will want special attention if they are not to suffer by the deprivation of her care. Strong-winged hens will fly up to roost, and if the chickens also be of a light and active sort and are well-grown, there is no better plan than to put a perch in the accustomed house or shed,

about two feet from the ground, and to allow them [illegible] to her. For several nights she will partially brood them on her perch, allowing one or two [illegible] between her legs, and spreading her wings over the others. After a few days of this partia[illegible] however, she will begin to beat them off; when she must be altogether removed, and the [illegible]ge will be found of having accustomed the little ones to the perch, where they will be warm a[illegible] Large breeds, however, should not be allowed to roost, unless they are when forsaken near[illegible] months old; and not even then except they have abundant range of grass to give tone to the [illegible]n, and thus prevent crooked breasts. Otherwise, the hen should be taken away at once, and [illegible]kens left to sleep in either their accustomed coop, or any box turned on its side, and well flo[illegible]ith dry ashes, sand, or sifted earth, *cleansed daily*. The wood floor is much the best, if *wet*[illegible]d with the earth, as it keeps them dry and warm underneath. In such a box the chicks will a[illegible] up into one corner to keep warm, and will usually get on very well; but if they are very y[illegible]r the weather is severe, the artificial mother presently described must be brought into requi[illegible] If not previously accustomed to it, the chicks are easily taught its use by putting them und[illegible] the dark several nights in succession, always keeping the mother in the same spot, and scatte[illegible] some food close to it for the morning. Chickens when abandoned by the hen do best if they ca[illegible] have a pretty good shed to themselves, floored with loose earth and fronted with open wi[illegible]. A sleeping-box or mother can be put in each back corner, thus accommodating two broods; and they should be shut in at night, with some food for their breakfast, so that they cannot get out on the grass till the proper time.

As the chickens grow up they will probably have to be moved away from their first domicile, in order to make room for others fresh hatched. However this may be, at ten to twelve weeks old the cockerels must be separated from the pullets, and only chickens of about the same age be placed in a run together, else the weaker will stand no chance. Without separating the sexes the birds will never grow so large, besides which it prevents trouble, as a number of cockerels may be kept by themselves in perfect peace till full-grown. The chief things to guard against, however, will be any oversight in cleanliness, and any *neglect of the older chickens* for the sake of the young ones. Many a mistake is made here. The birds are growing fast now, and they must be fed liberally and well, or all the pains bestowed on them will be lost; whether their destination be the exhibition or the fatting-pen, this remark equally applies. Their four good meals must be regularly given—just enough to satisfy them and none left—mixed nice and dry, as we laid so much stress upon, and thrown about the grass-run if that be at command, or put in clean vessels if not; their water kept clean and frequently changed; and some animal food occasionally given to all except pullets which it is not desired should lay early; their sleeping-places kept sweet, and dry, and sheltered. Chickens thus cared for will thrive and be a credit, whatever the purpose for which they are reared. Milk may be still mixed with their food and given to drink, even up to six months old, if the range is good; but for birds in confinement it should be discontinued after about three months, being in such circumstances too much for the more sluggish digestive organs.

In the preceding remarks we have throughout taken it for granted that the young broods will be accommodated and reared apart from the stock of adult fowls. It is much to be desired that affairs should be thus arranged, and if otherwise it is impossible to avoid some waste both in time and money; but we have known chickens fed in a large yard amongst other fowls, and do better than might have been expected, by the use of a feeding-coop. This is made of netting stretched upon any light frame, so as to include about six feet square of ground, and about eighteen inches high. It can be divided if desired into several compartments; and by having doors to each, of various sizes, the larger fowls or chickens will be unable

to enter and share the food intended for the smaller, which is placed within it. At best, however, such a feeding enclosure is only a makeshift, and separate accommodation infinitely to be preferred.

The number of chickens which can be reared in a very limited space, *with care*, would surprise many who have not been forced by necessity to make the attempt. For several years we hatched annually from forty to fifty of our Brahmas, and reared more than half of them to maturity, with no other space than a pen twenty-two feet square, and a strip of ground (originally a flower border) seven feet by seventy. The pen or yard had a shed six feet wide all up one side, enclosed with netting; and the border was divided in two, and had a rough shed at each end. The hens were set in the shed, and the chickens cooped there, being let out in dry weather into the open yard, and fed constantly as already described. Our and their favourite food was a mixture of about equal parts in bulk of good oatmeal, crumbled bread, and grass cut small, mixed with milk, and with a little bone-dust added (of which we will say more hereafter in a chapter on rearing prize fowls). When the first lot of chickens was about six weeks old, the cockerels were put in one end of the border and the pullets in the other, leaving the yard for the next lot; though we have had sometimes the whole fifty in the yard at once. At about three months old we picked out the worst part of the chickens, and either sold, ate, or gave them away. By the middle of August we generally disposed of at least one pen of the old birds, and the "second crop" of chickens was then divided between the pen thus vacated and their own yard, so dividing the whole into four lots—two of cockerels and two of pullets—but always thinning them out, so as to keep only the good ones, as early as possible. The ground was trodden quite hard, and was regularly swept with a hard brush, and now and then sprinkled with carbolate of lime, by which it never became offensive; but every year we had it dug up a foot deep before the chicken-season began. Every year or two the earth in the sheds also was passed through a sieve, and all offensive matter thus removed. We either did these things ourselves (we often did) or *saw that they were done*; and, in particular, always took care that each coop or sleeping-box was cleaned and fresh sprinkled with earth every night. We hardly ever had a case of disease, and reared such pullets as we have again and again been offered ten guineas each for, just as they ran in the yard; but this was the result, be it remembered, of *personal* care and supervision, and we mention it to show what can be done where there is a real interest in the undertaking.

We still have to consider the rearing of chickens hatched in an incubator, or from any other reason deprived of the kind offices of a motherly hen. We have often seen it stated that here the difficulties of artificial production begin; that it is easy to hatch chickens, but almost impossible to *rear* them. The exact contrary is the case, not the slightest difficulty in the mere rearing of chickens artificially being experienced by any who will devote to the pursuit the necessary attention and care; and almost every fancier at times being obliged to make the attempt, from the death of a hen or other unforeseen occurrences. In such circumstances an artificial "mother" becomes needful; and after having had recourse to them on several occasions, we can unhesitatingly say there is no difficulty whatever in fostering and rearing chickens without a hen. Mr. Halsted goes further, and in his enthusiasm even affirms of artificial mothers:—"After five years' constant use of them, I reiterate that I would never put out a brood of chickens under a hen as long as I could make or get one made. My success with them has been *constant* and *perfect*. I raise fully one-fourth more chicks, and they are much more growthy and more easily restrained. The use of the hen is saved, for instead of taking care of her brood, she goes to laying again. When the eggs do not hatch well, three, four, or more broods may be united (although of different ages), and thus that

number of coops saved. Time is gained in feeding and care, for there is but one coop to care for instead of four or five. I do not consider heat (artificial) as necessary except in extremely cold weather. I have put out chicks in March (20th) without any artificial warmth, and had them do well; so have others who have used the same style of 'mother.' The idea of a self-regulating heat for the 'artificial mother' is simply a useless expense in construction, for which no adequate return is received." We must say we think this goes rather too far, and for a fine full brood of chicks would always prefer a good hen; but we can fully subscribe to the statement that chickens thus managed will grow, and thrive, and pay, without requiring more care than can be easily given to them.

The simplest form of artificial mother is in our opinion also the best, and is represented in Fig. 43. Its manufacture is the easiest thing possible. Purchase an ordinary coloured sheepskin mat, about two feet long by sixteen inches wide, which will make two mothers, and probably cost about eight shillings. A mat should of course be chosen with fine, soft, and rather long wool, but too *thick* a fleece is bad, as we once found after making this mistake that several chicks became hopelessly entangled and perished of suffocation. Too large a mother may lead to the same result, and hence the depth from front to back should not exceed twelve inches, whatever the length be—we

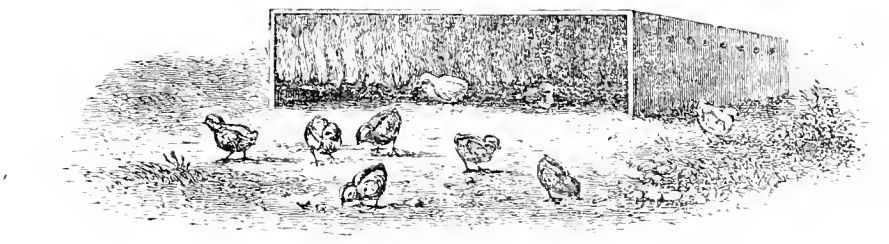
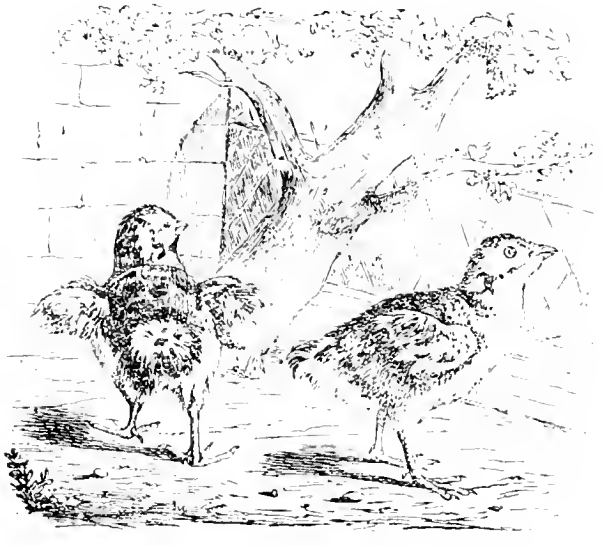


Fig. 43.

are supposing sixteen inches, which will accommodate about fifteen young chicks. A box, or rather box-cover without a front, must then be constructed of the size required, which will be about five inches deep at the open front, sloping back to three and a half inches behind, so that the chicks may creep back to the proper place where the sloping woolly cover comfortably cherishes them. Some small holes being bored in the sides and top for ventilation, this open cover is to be sprinkled with paraffine to guard against vermin, and the sheepskin then tacked inside with common tin-tacks, fastening it round the edges only, and not too tightly, so that its own weight may cause it to bulge a little downwards. The mother is now complete, and is best set upon a large board covered a full inch deep with sand, or ashes finely sifted, into which the chicks will nestle and keep themselves warm. The board under will quite prevent cramp, and a little carbolate of lime sprinkled in the ashes, with the paraffine above, will keep away vermin; while cleanliness is easily secured by passing the whole through a sieve daily.

Under such a mother, if the sheepskin has been chosen with judgment, chicks will thrive *well*. It is necessary to success to confine them for some days in a small run, the mother being at one end; for if this be not done, having no hen to call them back, they may run off and get lost. As soon as they learn to *know* their artificial parent, this confinement may be dispensed with; only taking care always to feed them close beside it. They must of course be given their food and water with scrupulous regularity; cleanliness must be looked to very carefully; and they must be confined under cover in all wet weather: otherwise their treatment will not differ from that already described.

These mothers are also very useful for early broods when hatched by Cochin or Brahma pullets, and forsaken before they can bear the cold. In such cases we put one down by the pullet or hen, and scatter a few grits under it to tempt the chicks. Doing this occasionally, by degrees as the hen begins to brood them insufficiently, they will resort to the artificial parent instead, and by the time the hen entirely casts them off are quite independent of her care. For Spanish chickens such an aid to the hen is particularly beneficial, and will save many a chick that would otherwise be lost at the stage when they are nearly bare of feathers, and require such constant nursing as the hen rarely gives them. Having often used them in this way for early chickens, we can confidently recommend them to others as a real assistance during inclement seasons, and would strongly advise that one or two should form part of the stock of every amateur.



CHAPTER VII.

FATTENING AND KILLING.

CHICKENS for the table, of the larger breeds, if the broods have been properly fed and cared for, will be quite large enough to kill at three to four months old. By large "enough," we mean that they will be from three to four pounds' live weight, which is considerably larger than the generality of spring chickens, of which we have weighed various average specimens as sold, and found many not more than two pounds and a half. So far, therefore, as mere size is concerned, they might be killed even younger, and in some parts of France chickens of about two pounds each are sent to market at about eight weeks old; but to our own fancy the flesh of such very young birds is *too* tender, or scarcely firm enough for good eating. We know persons, however, who differ in opinion upon this point; and by breeding crosses which have the property of early maturity, such as that between the Houdan cock and half-bred Brahma-Dorking hen, it is quite easy to send very good chickens to market at ten weeks old. So young as this they do not require fattening at all, and even if they did the process would be almost impossible, as well as cruel, as the active temperament common to all animal infancy would rebel against the confinement, and cause deterioration rather than improvement. If they have as much food as they will eat, properly given, chickens up to three months old are almost always plump, more so than they appear a month or two later, and should be killed just as they are, after a night's fasting. Even older chickens are, in our opinion, often better in their natural condition. We have killed Brahma cockerels four months old which weighed over six pounds, and have been told repeatedly that they exceeded in quality any which could be purchased in the ordinary way; and Dorkings or Brahma-Dorkings would appear even more plump at a similar age. In certain localities, however, fatted fowls or chickens will alone realise the best prices, and are in demand, and thus in many cases fatting is necessary for the sake of commanding the market. During the Epsom week many of the fatted fowls sent up to furnish the hampers of the racegoers realise nine to ten shillings each, or even more; hence the best processes of fattening occupy an important place in poultry economics.

The old plan of fatting fowls was to put from eight to a dozen in a coop with an open front, feeding them regularly three times a day. By employing a railed or barred floor, so that all the dung can fall through, very good results may be obtained in this way, though either of the processes of cramming are now considered quicker and more economical, as compared with what we may call the natural plan. The coop must be arranged so as to be perfectly dry and free from draught, and should have a canvas cover to draw down and keep the inmates in darkness. Only fowls which have run together must be penned up in one coop, or their disagreements will prevent any increase of weight. Before commencing, the coop should be whitewashed and the bottom bars cleaned, to prevent annoyance from vermin; and when put in the chickens should be left for several hours without any food at all. This is essential, and the neglect of it is why many amateurs in their first attempts in fatting their surplus, completely fail; as the birds being naturally fretful at their confinement refuse to eat heartily, and rather pine away; whereas by well fasting them before *any* food is given, they begin to feed at once. The quantity must be measured by the appetite, and none on any account left, but clean fresh food given as much as can be eaten

without leaving, and water being supplied at the same time. When the feeding is done the canvas covering should be drawn down, and the birds left in darkness till an hour before the next meal. The times of feeding must be observed with the greatest punctuality, or the fowls will fret and lose condition. The best food will be a mixture of barley-meal and oatmeal, or buckwheat meal with the husk sifted out, and mixed with milk. A little suet or lard added is recommended by some good authorities, and increases the fattening, but only to the advantage of the basting-ladle. The process will be completed in from fifteen to twenty days, and should be carefully watched, as when the proper point is once reached, the chickens if not immediately killed rapidly decline again.

In Surrey and Sussex, as well as some other parts of England, fowls are regularly crammed; but it is to France that we must go for the best information on this method of fattening, cramming being there carried on upon a system and to an extent which almost elevates it into a fine art. In the better French markets, in fact, an unfatted fowl is almost unsaleable; and the keen competition has probably brought the two processes chiefly employed as near to perfection as possible. From the best French authorities we shall extract a full description of both, viz., the artificial administration of solid food, and of nutriment in a semi-fluid state.

Of the former method the best description is given by Mdlle. Millet-Robinet, in her treatise called "Oiseaux de Basse-Cour," published at Paris under the authority of the Ministry of Agriculture. We adopt a translation made for the Journal of the Royal Agricultural Society by Mr. Frere, only adding that the poultry fatted by Mdlle. Robinet in this manner are of the La Flèche variety.

"In this method of cramming it is necessary to provide sparred coops, in which each fowl has its own compartment. The coop is a long narrow box in white wood, set on legs one foot and a half high; the outer walls and partitions are close boarded, and the bottom only is made with rounded spars one inch and a half in diameter, running lengthways of the coop, on which the fowls perch, their dung falling through the bars. The top consists of a sliding door, nearly as wide as the compartment, by which the chickens are taken in or out. The partitions are eight inches apart, so that the fowl *cannot turn itself round*. The length of each box may be regulated by circumstances, care being taken that the attendant has room to pass along and to sit down; and furthermore, that cocks, capons, and pullets, or the lean and the fat lots, be not mixed up indiscriminately. If fowls of different sexes are in close proximity, though nothing beyond *vocal* relations be established between them, the fattening process will be delayed; or again, fowls of different degrees of fatness should not inhabit the same box, because their rations will differ, and the new-comers will disturb the old settlers by their noise.

"Young cocks will fatten, though not so readily as capons; their flesh is somewhat inferior in delicacy to that of capons, and yet more so to that of pullets.

"The floor below the boxes is covered with ashes or dry earth to catch the droppings, which are removed every two days with a scraper. The dung is equal in value to guano, and should be preserved from waste and moisture in old casks.

"The best food for fatting fowls is buckwheat meal, 'bolted' quite fine. This is kneaded up with sweet milk till it gets the consistency of bakers' dough; it is then cut up into rations about the size of two eggs, which are made up into 'rolls' about the thickness of a woman's finger, but varying with the sizes of the fowls; these are subdivided by a sloping cut into 'pâtons' (pellets two and a half inches long.

"A board is used for mixing the flour with the milk, which in winter should be lukewarm. It

is poured into a hole made in the heap of flour, and mixed up little by little with a wooden spoon so long as it is taken up; the dough is then kneaded by the hands till it no longer adheres to them.

"Some say that barley or even oatmeal is a good substitute for buckwheat meal, but Mdlle. Robinet is not of that opinion. Indian corn, the white variety, may do, but it is dear, and makes "short" paste, unless mixed with buckwheat, when it answers well if cheap enough; but buckwheat is a hardy plant, which may be grown anywhere at small cost.

"The food is thus administered:—The attendant puts on an apron which will stand being soiled or torn, and takes the pellets on a board, with a bowl of clear water. She takes the first fowl from its cage gently and carefully, not by the wings or the legs, but with both hands under the breast. She then seats herself with the fowl upon her knees, putting its rump under her left arm, by which she supports it; the left hand then opens its mouth (a little practice makes this very easy), and the right hand takes up a pellet, soaks it well in the water (*this is essential*), shakes it on its way to the open mouth, puts it straight down, and carefully crams it with the forefinger well into the gullet. When it is so far settled down that the fowl cannot eject it, she presses it down gently with thumb and forefinger into the crop, taking care not to fracture the pellet; for if some scraps of it remained in the gullet they might cause inflammation.

"Other pellets follow the first, till the feeding is finished in less time than one would imagine. It sometimes happens, particularly in the early stage of fatting, that the tracheal artery is compressed together with the gullet; this makes the creature cough, but is not of any serious consequence, and with a little experience this mishap is easily avoided. The fowl when fed is again held with both hands under its breast, and replaced in its cage without *fluttering* it; and so on with each fowl.

"The chicken should have two meals in twenty-four hours, twelve hours apart, provided with the utmost punctuality; if it has to wait it becomes uneasy, if fed too soon it has an indigestion, and in either case loses weight. On the first day of cramming only two or three pellets are given at each meal; the allowance is daily increased by one at a time till it reaches twelve to fifteen pellets. The stomach may be *filled*, but at each meal you must make sure that the last is duly digested, which is easily ascertained by gently handling the crop. If there be any dough in it, digestion has not gone on properly; the fowl must miss a meal, and have rather a smaller allowance next time—if too much food be forced upon the animal at first it will get out of health and have to be set at liberty.

"The fatting process ought to be complete in two or three weeks, but for extra fat poultry twenty-five or twenty-six days are required; with good management you may go on for thirty days, after which the creature becomes choked with accumulated fat, wastes away, and dies.

"When a fowl is to be killed, it should first be fasted for twelve to fifteen hours, and then held carefully (not hung up by the heels, which would suffocate it), the mouth opened, and either the under side of the tongue cut with sharp scissors, or the pointed blade of a knife thrust into the palate till it pierces the brain; or, thirdly, a few feathers may be plucked from the left side of the head just below the ear, and a good incision made at the spot. In any case it must be fastened up by the heels immediately afterwards, that it may bleed freely, for on this the whiteness of the flesh depends; but during the death-struggle let it be held by the head. The chicken is then bandaged till cold to mould its form; and if the weather is warm it is plunged for a moment into very cold water. The fat of fowls so managed is of a delicate white colour; their flesh is as it were seen transparent beneath a delicate skin. An average fowl takes about one and one-tenth of a peck of buckwheat to fatten it."

So far Mdlle. Robinet as rendered by Mr. Frere. But during many years a preference has been growing in the best poultry-districts of France for feeding the caged birds with food mixed thinly. One of the most strenuous advocates of this system is M. Jacque, whose work called "Le Poulailler" has always since its publication been considered the standard authority on the poultry of France. After describing the natural feeding, and the cramming with pellets (as we have quoted from Mdlle. Robinet), M. Jacque enters upon what he terms the third method of fattening, as follows. We give as literal a translation as possible :—

"This third method we may call funnelling, or the cramming by means of a funnel, with farinaceous food in a liquid form. This last method will in the end be universally adopted, it is so simple, easy, and rapid. This is how it is done.

"Those who wish to fatten fowls provide themselves with barley-flour and not with broken barley; for it is not desirable that the bran should be mixed with it, on the contrary, it ought to be properly sifted. They take some meal and mix it smoothly with milk and water in equal parts.

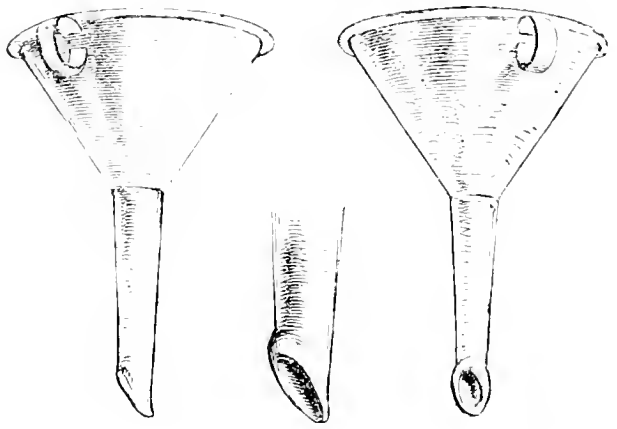


Fig. 44.

This mixture ought to be of the thickness of clear soup when it begins to boil; and I repeat that the milk and water must be in *equal* proportions, for experience has shown that if there be more milk the fattening process stops at the end of a few days, and the bird falls off and dies.

"It is also necessary to get a funnel of tinned iron, large enough to hold as much as is proper to give at a meal to every sort of fowl (see Fig. 44). The upper opening is 0.10m. (4 in.) broad, and 0.06m. (2⅓ in.) deep measuring down the middle. The pipe or neck is 0.09m. (3½ in.) long. The upper part of the pipe has an outside width of 0.025m. (1 in.), and the lower end 0.015m. (⅔ in.). This end, intended to be placed in the bird's throat, is cut off slantwise, and turned up so as to make a rounded edge. This edge is further softened by a small tin rim carefully soldered on. At the upper edge of the funnel is fixed a small ring intended for the first finger of the right hand; the place of this ring is very important, for we must be able while holding the fowl's head with one hand to introduce the funnel in the proper position, which can only be easily done when the ring is in the right place.

"The opening of the lower end of the tube (which as we have already stated is slanting) ought to be turned from the side of the operator; this is why the ring in question is soldered on the upper edge of the funnel 0.05m. (2 in.) to the right of the direction of the lower opening of the tube.

"Persons who are quite accustomed to it use the funnel without any danger, but with those

who do not use it constantly there is some danger of tearing or scratching the membranes of the throat; it is therefore an excellent plan to cover the end with india-rubber, which makes it very little larger—this precaution will avoid accidents which might produce disease.

"All this is very simple, and I have only described it at length to make sure of being thoroughly understood, and because it is of the greatest importance.

"The prepared food is placed in a vessel from which it may be easily dipped out with a long-handled spoon; then when all is ready we take the bird by the wings near the shoulders and place him with his head in front, between the knees, so as to hold him without hurting or stifling him. He will struggle a little the first few times, but will soon become accustomed to it. When he is quite quiet we place the right forefinger in the handle of the funnel, seize the fowl's head with the left, and stretching his neck well out, open his beak with the help of the right hand still holding the funnel.

"When the beak is properly open we must manage to keep it so for a moment with only the left hand, and quickly introduce the funnel the whole length of the tube, taking care not to hurt the inside of the throat.

"The left hand holds everything quite easily—the fowl's head in the palm and the three last fingers, holding the funnel with the thumb and forefinger.

"We then take the paste, with which we fill the funnel, except it should be too much at first, keeping the neck properly stretched out. We lay down the spoon with which we have taken up the paste, and with the right hand hold the fowl's crop until we feel that it is full, which we can hasten by passing the hand over it a few times. Then we put the astonished bird down, and go on to another.

"The meals should be given regularly three times every twenty-four hours, eight hours between each feed—six a.m., two p.m., and at ten p.m. in town houses; at four a.m., twelve noon, and eight p.m. on farms.

"To facilitate the operation and avoid accidents of forgetfulness, and vain attempts which fatigue and irritate the fowls, proper accommodation must be provided according to the number of birds to be fattened, consisting of two, three, or four open pens, in which there ought not to be more than ten together. These pens, raised from the ground, are placed in some quiet situation, in a stable or some other *temperate* place, protected from draughts, and there ought always to be an empty one to spare. When all is ready we cover the bottom of the empty pen with fresh straw, and then proceed to the feeding business, passing every fowl as soon as filled into the empty pen. We continue thus until all are done, and the straw ought to be changed every day in each pen as soon as empty; for good raisers, and especially those who raise for themselves, never leave the birds on the dirty straw, as it always imparts a bad flavour to the flesh.

"It is necessary to watch the birds carefully, and if a bird makes no progress, to kill it immediately. We must be careful also to select for this treatment only birds in good condition and healthy, for we should try it in vain upon weak fowls, who instead of fattening would only fall sick and die, without any profit to the raiser. The time taken for fatting is from fifteen to twenty days, according to the species and the individual birds; a longer time only makes the fattened fowls grow thin again."

The fattening by means of food in a semi-liquid state appears to be coming more and more into favour in France, and *machines* for cramming with food so prepared have now been employed for years by the largest French feeders. They are considered to disturb and excite the fowls less, the whole meal being injected at one operation; and the time saved is very great. In all of them

the main part of the machine consists of a large cylinder, which is filled with food, and furnished with a mouth or nozzle at one end, whilst the contents are forced out by means of a piston. In the French machines this is usually worked by a treadle, and the whole method of management is very clearly shown in Fig. 45, one person managing the machine, and another removing the birds from and to the pens.

Various minor improvements as regards the management of fowls thus treated have been made from time to time, but the most perfect system yet developed appears to be that carried on at the town of Cusset, by M. Martin, whose method of procedure is so superior that the

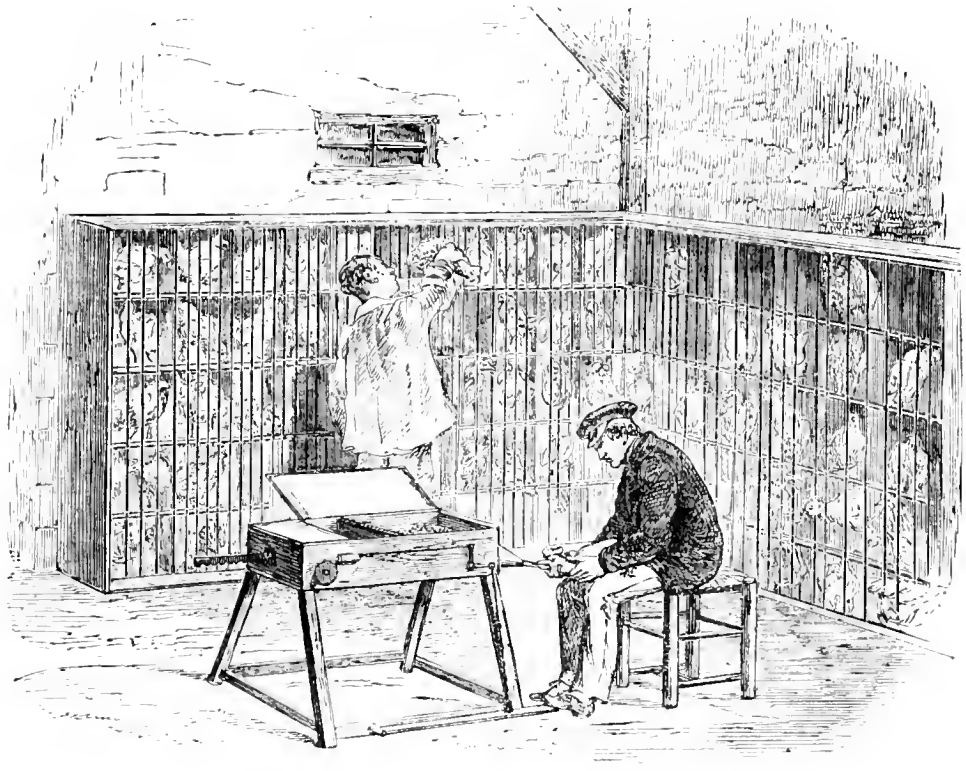


Fig. 45.

Agricultural Society of Allier published in 1870 an official report upon the plan and apparatus of his establishment.

The food employed by M. Martin consists of fine maize and barley-meal, mixed in about equal quantities; to this is added a portion of lard, and the whole is then mixed smoothly with milk, so thin as to be almost liquid. The feeding-house is a large airy building on the summit of a hill, and is furnished with three revolving octagonal stands, which, as they turn on their upright axes, present each side in succession to the operator, precisely in the same manner as the revolving show-stands so often seen in shop-windows. Each side of the stand contains five perches for the fowls; and as each perch roosts five birds, the stand accommodates 200 fattening birds. The perches are arranged over each other, and under each perch is a board sloping backwards, which throws all the droppings into the centre of the machine, and effectually prevents them falling on the birds below. Every morning a little straw chaff is thrown upon them, and the whole taken away in a barrow running under, by which means the fowls are kept perfectly clean.

The most peculiar thing about M. Martin's management, however, is the singular fact that the fowls are *tied upon their perches* by thongs of raw hide, which are passed round their feet, but leaving them otherwise at perfect liberty. Partitions or upright slabs fixed to the perches divide them from each other, and keep them practically in separate compartments, with the great advantage of a free circulation of air. The whole apparatus is frequently disinfected with sulphate of iron, which keeps the birds perfectly free from vermin. The feeding is done by a machine which contains the food in a reservoir. The operator, who has a seat which he can vary in height, takes the head of a fowl in one hand, and with the other places down the gullet of the bird a nozzle fixed on the end of a flexible tube which reaches to the machine; by then pressing down a treadle, a piston forces the proper quantity into the fowl's crop. A graduated dial regulates the quantity given, according to the age, size, and stage of fattening of each bird. A slight push with the hand causes the frame to revolve so as to bring the next bird opposite the feeder, and the feeding is thus performed with such rapidity that one hour is sufficient for the entire 200 birds. The commission states that the fowls seem to enjoy this novel mode of treatment, and that if any drops of the nearly fluid food fall accidentally upon the perches, they are eagerly pecked up by the eager birds. As soon as the fowls are ready for market they are hung up by the feet, a cloth passed round them to prevent struggling, and a small knife thrust into the throat. As soon as dead, they are plucked, washed, drawn, wrapped in wet cloths to cool rapidly, and placed on a stage that the blood may freely escape, on which the whiteness of the flesh depends.

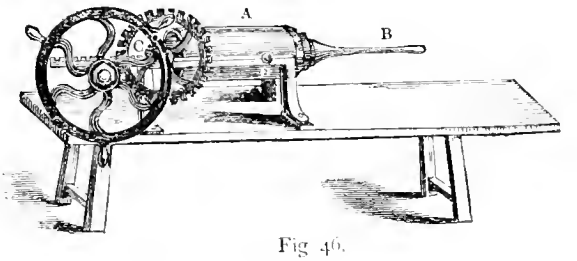


Fig. 46.

These arrangements we quite agree with the commission are well worthy of consideration. It might be thought that the fowls would struggle violently on finding themselves fastened to the perches; but this is not the case if put on at night. The advantages in cleanliness and ventilation are very great, and it is found that the birds almost invariably thrive and fatten well. The commission, in fact, expresses great surprise and satisfaction at the results achieved, and strongly recommends the adoption of M. Martin's system, which may be considered to be the "latest improvement" as regards poultry-fattening in France. In this country we believe the sole manufacturers of machines for cramming are Messrs. Crook, whose apparatus is represented in Fig. 46, where A is the cylinder containing the food, terminating in the flexible nozzle B. The piston which forces out the food is propelled by a rack and pinion, C, driven by an ordinary power-gearing from the hand wheel, which is furnished with three handles. In using, the cylinder is turned upon the pivot D to an upright position, and filled with the semi-liquid food; the whole is then returned to the horizontal position, and by means of the three handles on the wheel, the proper quantity is injected into the gullet of each fowl by turning the wheel one-third of a revolution. It will be seen that two persons are required to work this machine; and it would be better as a piece of mechanism if the cylinder were retained permanently in an upright position, or the piston worked by a treadle in the French mode, the nozzle being gradually

curved to the proper horizontal position. A graduated dial, as employed by M. Martin, is also highly useful, since different-sized fowls, or birds at different stages, will require different quantities of food.

For many markets, and for home use always, cooping up is not at all essential to fattening. Chickens or fowls reared at liberty and in good health, will lay on weight rapidly, and make splendid birds, if simply confined five or six together in a shed floored with clean sand, and fed three times daily with as much soft food as they will eat. The first meal must be given at daylight, and the last at nearly dusk, and they must be kept warm and sheltered. If they are kept waiting for food in the morning they fret, and the feeding of the day before is practically neutralised. Birds will often add one-third of their weight if taken off their runs and fattened for a fortnight merely in this natural way.

Closely connected with the subject of fattening is the operation of caponising, or depriving the cockerels of the power of reproduction, so largely carried on in France, but comparatively little practised in this country. There is no doubt that the weight of the birds and delicacy of the flesh are enormously increased by it; and on the ground of cruelty there is little to be said whilst all our oxen and most of our sheep are prepared for the butcher in a similar way. Considerable ignorance prevails on the subject in England as to the practical value of the operation; and even Mr. Tegetmeier,* after quoting a description of the process from the same French work from which we take our own, adds that "the operation of making capons and poulardes is attended with considerable danger. The advantages gained are slight in comparison with the risk of losing the bird, and with the positive amount of unnecessary pain inflicted on the animal. We would therefore by no means recommend its adoption." On the contrary, the usual mortality in France amongst the birds thus treated is only about one in forty, and the danger is thought so little of that the operation is frequently committed to mere children. In Italy, also, capons are largely prepared for market; and even in China the process has been extensively adopted. That it is not so in England is simply owing to the neglect of poultry generally in a commercial point of view.

The French operation is best described in the work already referred to by Mdlle. Millet-Robinet. The time chosen is about the age of four months, and when the weather is rather cool and moist; in the heat of summer it is attended with danger, and is rarely performed. The instruments are two—a small curved knife, kept very sharp, and a curved surgical needle, with some waxed thread. Two persons are required, one of whom operates while the other holds the bird.

The operator sits down, and the assistant holds the bird on his lap, with its back towards him, and the right side downwards; the lowermost leg being held firmly along the body, and the left leg being drawn backwards towards the tail, so as to expose the left flank, where the incision is made. A few feathers being plucked off to expose the skin, the latter is raised up with the needle so as to avoid the intestines, and an incision large enough to admit the finger easily is made into the abdominal cavity, just at the posterior edge of the last rib; in fact the knife is kept close to the edge of the bone as a guide. Should any portion of the bowels protrude through the wound they must be gently returned. The forefinger is then introduced, and passed behind the intestines towards the spine, on each side of which the two testicles are situated, being in a young bird of four months rather larger than a horse-bean. One of the testicles being felt, it is to be gently torn by the finger away from its attachments to the spine, and removed through the wound, the

* "Poultry Book," p. 96.

other being afterwards sought and removed in a similar manner. Care must be taken that the testicle does not slip away ong the intestines after it is detached, when its detection and removal from the body may be ficult; but even if this accident should occur it is not often followed by serious results, thou ceasionally it does excite inflammation.

Both testicles being safely oved, the edges of the wound are brought together and kept in the proper position by two o ree stitches with the waxed thread. These are made in the usual surgical mode, each stite ing detached, and separately tied, not sewn as a seam. In making them the chief thing t ard against is to avoid even pricking the intestines with the needle, much less including any ion of them in the stitch, which last would inevitably result in the death of the fowl. When s done rightly there should be little bleeding or suffering; and the whole being safely over, the l should be put under a coop in a quiet place and given only soft food, such as sopped bread, water. After a few hours he may be put by himself in a run or yard; but until perfectly h l must not be allowed to perch, but obliged to sleep on straw. For three or four days the soft fo st be continued; and when entirely recovered the bird may be either set at liberty if wanted to rear chickens, or put up to fatten.

Pullets are also converted into *poulardes* by depriving them of the power of producing eggs. In France it is usual to extirpate the ovary, but this is needless; the operation recommended by Mr. Yarrell of simply dividing the oviduct with a sharp knife being quite sufficient. The flank is to be exposed in the same manner as in the preceding case, but the incision should be made close to the side-bone. The lower bowel will then be seen, and close beside it the oviduct, which is then easily drawn forward by a blunt hook and cut across. This entirely stops the development of the ovary, and causes the bird to attain a great size

The Chinese operate somewhat differently to the French. The chickens to be caponised are fasted for at least twenty-four hours, as this is thought to diminish bleeding. The bird is then placed on its left side, with the wing folded back and kept under one foot of the operator, who works without an assistant, while its legs are kept fast under the other foot; or sometimes an assistant is employed. The feathers are now plucked from the right side near the hip-joint, and the incision is made between the two last ribs, going just deep enough to divide them. Several rude instruments are used, and the testicles are usually removed by the sawing of a rough loop or ligature of cocoa-nut fibre across their attachments. In one respect, however, their process is better, the wound not being stitched up, but the skin being forcibly drawn on one side before the incision is made; so that when the whole operation is completed and it is released, it covers of itself the wound in the flesh, and avoids the irritation which stitches sometimes produce.

Generally speaking, it may be said that either capons or poulardes exceed in weight about one-fifth what the same birds would have been if fatted in their natural state; but the flesh is also whiter and more delicate, and the development plumper upon the table. In the case of pullets we must say we think the operation unadvisable, the birds being valuable for laying; but the art of caponising cockerels might be extended in England with great advantage, as fowls thus treated remain tender even if kept to the age of eighteen months, when they make enormous fowls, and may be employed in nursing chickens meanwhile. Hence the process becomes of considerable importance to all who consider poultry-keeping from a commercial point of view.

Before being killed, all fowls should be fasted for at least fourteen hours. Several methods of killing have been mentioned in the quotations already given. M. Soyer recommends breaking the neck, which is done by taking the head in the right hand, with the thumb against the back of it; seizing the neck with the left, the same arm supporting the fowl; then a quick jerk with the

right hand, turning the thumb downwards at the same time, separates the vertebræ, but it takes a rather strong arm to do it. Countrymen, and many others, attain the same object by taking the head in the right hand and swinging the fowl round by it; one swing properly done will dislocate the spine. Another method is to strike a sharp blow on the back of the neck with a stick; but any of these methods may cause much needless suffering in unskilful hands. It is true there is *no* "instantaneous" method of killing a fowl, the tenacity of life being very great; but the actual operation should be only momentary, and we strongly advise all inexperienced amateurs to make sure of the matter by laying the neck on a block, and chopping off the head at a blow. What we have said as to the tenacity of life may be illustrated by saying that even after this capital operation the bird, if left to itself, will struggle violently all over the yard; but this can, perhaps, hardly be called life in the true sense, and we may hope there is little or no conscious pain. The fowl should of course be first bandaged to prevent struggling, and, indeed, this ought to be done in all cases where the knife is employed, afterwards hanging up by the feet to bleed freely. When the head is cut off, the skin should afterwards be drawn neatly over the stump, and tied.

Poultry should be plucked or picked whilst still warm, when the feathers will be removed with much less difficulty. Fowls are generally picked quite clean, but it looks better in the case of chickens to leave a few feathers about the tail. They will *eat* best if nothing further is done to them; but it improves the appearance greatly for market to plunge the carcase, immediately after plucking, into a vessel of boiling water for a few moments, which will "plump" it a great deal, and make the skin look bright and clean. After scalding, turkeys and fowls should be hung by the legs, and waterfowl by the neck. For sending to market wholesale they should not be drawn, as they will keep much better without, and this is the proper business of the retailer; but in selling for consumption the birds should be properly prepared for table. It may not be out of place to remark that if after drawing the cavity be filled with charcoal broken in small pieces, the fowl may be kept sweet a considerable time.

Aged birds should, if possible, be hung for ten days or a fortnight before cooking, which may generally be done with the help of the charcoal just mentioned. If they are then half boiled, and the cooking finished by the fire, they will be found much more tender than if the roasting process alone be employed, and, indeed, if not over the age we have stipulated for, will be very good eating. Fowls over the two years and a half will hardly be worth eating at all.

Passing from age to youth again, it may not come amiss to many amateurs to say a word as to the disposal of *very* young chickens. Where the space is very limited, and is all wanted for birds of first-rate quality, it is often impossible to keep the chickens till large enough for roasting; they *must* be killed as soon as their comparative worthlessness from an exhibitor's point of view can be determined. We have ourselves, when badly off for space, been thus obliged to kill to waste, where we should now make a *chicken pudding*. We cannot better describe this well-known Sussex dish than in the words of a correspondent of the *Journal of Horticulture*. "Take some," he says, "according to the size of the pudding, of the least promising of your chickens, put them away to fast during six or seven hours, kill them [very young chickens should always be decapitated], have them picked quite clean, hang them in a cool larder for a day and night, and then proceed to cut them up, but do it properly. We have heard the cut of a coat criticised by its being said it looked as though it was chopped out with a spade, and we have seen chickens cut up as though the operation had been performed with a hatchet. First take out the crop, then take out *all* the inside; cut off the feet, and put them in nearly boiling water (all the skin will then easily peel off), put them, the neck, the gizzard (having first taken out the inside), the liver,

and heart, in a small quantity of water, and let them boil for gravy. Put the chicken on a table on its back with the crop towards you; take a sharp knife, and cut from the point of the breast-bone to the wing, being careful to keep the edge of the knife against the bone all the time, that no meat may remain on the carcase; raise the meat that is divided, and remove it wherever it adheres to the bone. This gives you a delicious wing. One of these will come from each side of the breastbone, and will leave it denuded of meat. These are the two choicest pieces. Next remove the two legs and divide each at the joint, making thigh and drumstick of each; then the wings, cut them off, and divide at the principal joint. You will then have a small merry-thought and two small side bones. Lay the carcase on its side, and chop it in half lengthwise. If you have followed our instructions closely there will be little or nothing left on the breastbone; nevertheless, put it in the saucepan that is already turning water into gravy. Then divide the backbone just below the oyster-pieces, and flatten them with a good blow of the flat side of the chopper. Thus from each chicken you have two slices of breast, two thighs, two drumsticks, a merry-thought, two side bones, the wings, and two succulent pieces of back. Next take three or four thin slices of salted pork and put with them. It is a wonderful improvement to cut up two sheep's kidneys and add to it. Luxurious people put ham instead of pork, and some add mushroom and a few oysters. As we are not writing for them, we will return to our plain dissected chicken and our slices of pork. Season them to your taste. Then make a nice suet crust. Take a basin according to the size you desire, line it well with the crust, and then dispose your pieces artistically as though you were making mosaic work—do not throw them in. Pour in your gravy, tie the basin with a cloth, and boil long and gently. If our description is correct, and you like it as well as we do, your chickens will be benefactors instead of plagues, and you will often ask yourself whether they are large enough for a chicken pudding."

We can thoroughly recommend this recipe to all whom it may concern.

CHAPTER VIII.

THE CULTIVATION OF POULTRY AS NATIONAL FOOD.

WE have been frequently asked, especially by those of our personal friends whom to know the best was to love and esteem the most for all those qualities that make a friend worth possessing, how we could devote the time and thought which for years we have done to the study of fowls. To those who have never seriously considered the subject of poultry in its various bearings the question and the imputation it implies may seem very natural; in the case of those who have, both alike may provoke a smile, as they recall the many reasons which may well deepen an interest that in our own case has steadily grown greater year by year.

Chiefly however—and to put the whole matter in a nutshell—we long ago discovered that the various products of poultry, properly managed, formed the *cheapest animal food which can be procured*. Seeing therefore, as we have seen, much of what life is amongst the labouring and even many of the middle classes; knowing, as we have known, how much of that life consists in a mere struggle to live, and what the great "food question" *really means* to thousands of households; we have felt fully warranted to consider in the most earnest spirit anything which bears directly upon so serious a subject. It would be easy to show that such pursuits do not necessarily hinder other efforts in the same cause, and that many a "poultry-fancier" has done other good work for his day and generation; but independent of this, we are content to let the question rest upon its own merits. We have been obliged, in the course of a by no means long life, to learn how many thousands—nay, millions—there are, who scarcely taste animal food from one year's end to the other; and to contemplate the perhaps still more painful spectacle of the many in a so-called "respectable" position, who are obliged to maintain a certain outside appearance, whilst the bitter consciousness is ever present to them that their wives and families, though not starving, have not such food as is really needful for health and strength. Into the many serious questions which underlie all this we cannot here enter; but we may be at least excused for considering that *anything* which bears practically upon this perplexing social problem, or which may lighten to even a few the heavy burden they have to bear, is worthy the most earnest consideration of every thoughtful man.

And poultry *does* bear practically upon this question, and we do so consider it more and more with the added experience of every season. We recommenced poultry-keeping ourselves some years ago, after long cessation, simply to provide a few eggs for home consumption; and if we have been gradually led far beyond this, to an expenditure of time and study which no mere pecuniary return can ever repay, it has not been from the enthusiasm of a fancier, but from the force of circumstances and of such considerations as we have adverted to. We have proved again and again, personally, that poultry *may be made* a help to many, and that even our own labour in this direction has not been altogether thrown away. It is true that many persons cannot, if they would, keep fowls; but many others can: and hence we regard it as both a worthy and a practicable object to spread as widely as possible the better knowledge of a creature which seems expressly adapted by Providence to supply the *very best animal food for a young family* which Nature has provided.

We have already said all that is necessary regarding the management of a few fowls for home supply. It has gratified us to see the steady increase in the number of fowl-houses which appear

in small town yards or gardens of late years, and still more to ascertain, as we have often done, the generally satisfactory results when sound directions have been fairly attended to; though there is still much room for progress in this respect, and there might be a far more general enjoyment of the luxury of a fresh egg at half the present price of stale. In our next chapter we shall also show how that "fancy" part of the subject, which is so often supposed to have nothing to do with these matters, is in reality most closely connected with them; and we have now, therefore, simply to consider poultry in its aspect as a source of food for *sale in the market*, whether that food be supplied by large establishments, or be collected from a number of small producers.

It is by the latter system chiefly—that of collecting the produce of a number of small raisers—that France exports such enormous numbers of eggs for consumption in England. The steady growth of this trade for many years past cannot be better shown than by the following table, which gives the number, value, and average price of eggs imported from France into Great Britain during every alternate year from 1856 to 1868, and thence to 1871 yearly; the two former items being extracted, and the prices computed, from the Board of Trade returns:—

	1856.	1858.	1860.	1862.	1864.
Number of Eggs.	117,230,600	134,685,000	167,695,400	232,321,200	335,298,240
Value	£278,422	£303,617	£478,658	£593,813	£835,028
Average price per 120 . . .	5/8	5/5	6/11	6/1	5/11½
	1866.	**1868.**	**1869.**	**1870.**	**1871.***
Number of Eggs	438,878,880	383,969,040	442,172,640	430,842,240	522,132,720
Value	£1,105,653	£1,009,285	£1,126,853	£1,102,080	£1,265,484
Average price per 120 . . .	6/0¾	6/3	6/0¾	6/1½	5/10

In considering this table, with a special reference to the possible development of egg-production in the United Kingdom, certain features at once strike the attention. In the first place, great encouragement may be gathered from the fact that not only has the increase in this article of export been very rapid, but the value has actually more than quadrupled within fifteen years; and in the second place it will be seen that, notwithstanding this enormous increase, the price is maintained with great steadiness, never varying to any very great extent from an average of about six shillings per 120 eggs. Then, passing to the absolute magnitude of this trade, and its value as a branch of national production, several considerations arise. The importation now amounts to about ten millions of eggs weekly; and, assuming the population of the United Kingdom at thirty millions, *seventeen eggs are annually imported from France* for every man, woman, and child, of this population. Bearing in mind the large importations from Ireland, and the number also produced and consumed on the spot, the importance of eggs as national *food* may now be adequately estimated. But still further, assuming the population of France to be thirty-seven millions, and to be arranged in average families of five, for every single individual over fourteen eggs are exported annually; and the value of even the English trade exceeds £1 *sterling*

* In the official return for December, 1871, containing the importations for the whole year, there is a very serious error; the quantity being only represented as 1,351,106 hundreds of 120; whereas it should be, as we have discovered from other sources, 4,351,106 hundreds.

for every six families in the nation. When it is considered that the French people themselves are greater consumers of eggs than perhaps any other, so that it is computed every Parisian on an average consumes about 160 eggs annually, the importance of the business as a branch of national *production* will also be seen.

Remembrance of the fact already stated, that this large French egg trade is the result almost entirely of the collection by dealers throughout country districts, might open up a very wide field for promoting more extensive production of this food in England. Such an object deserves attentive consideration from all whose influence could be brought to bear upon it with effect, and we would desire especially to call the attention of country clergymen, and others really interested in the moral and temporal welfare of the poorer classes, to the good that might in this way be done, in adding both to the food of the country and to the resources of the labouring man. The benefits which have already been accomplished by the provision of allotments is universally acknowledged; but what we wish to point out is, that in many cases much greater return may be obtained from the same piece of ground by keeping poultry than by raising crops. We say in many cases, because the capacity to understand and carry out sound methods of management is by no means universal, but is essential to success. This being granted, however, several advantages of thus employing an allotment may be pointed out. In the first place, valuable manure will be provided for other allotments, or for parts of the same still reserved for growing vegetables. Again, the growing and caring for live stock both demands and creates a higher kind of intelligence than the cultivation of ground, and would tend to encourage feelings of more humanity towards the lower animals than notoriously exist at present amongst the labouring class. And finally, while digging in a garden is exhausting toil, which, being of the *same character* as the long day's work already over, tends to exhaust that strength which should be given to the regular employment on the following day, the attending to poultry would be both work of a light character, and a pleasant change, beneficial alike to the mind and body of the labourer. For these and other reasons which need not be pointed out, we would therefore seriously ask those who have at heart the real welfare of their poorer brethren, to seek to encourage such a state of things.

In the cultivation of poultry upon such village or country allotments, the system should differ in several particulars from other management, on account of the special circumstances. It will be best to *overstock the ground*, as it would be called, keeping the fowls in small yards, say of about fifty square feet to each large bird, or thirty feet for smaller. The reasons are many, and will be seen as soon as stated. It is *labour* which in this case is sought to be utilised; and by daily taking up as much as possible of the manure, perfect health may be maintained. Sufficient green food can also be readily obtained from the refuse of neighbouring allotments, without the necessity of having pens large enough to keep in grass. Most important of all, making the wooden houses on sills, so as to be movable, every two or three years the whole should be removed to and exchanged with a neighbouring allotment which has been cultivated, thus giving rich ground to the cultivator in exchange for fresh for the fowls. Should this be found inconvenient, the one allotment should be divided, and one-third in regular rotation be cultivated with the spade: in this way the largest possible return will be got from the ground. The other management will be as before stated, and friendly oversight will be needed at first to ensure the three grand points of early hatching of the pullets, judicious feeding, and regular killing of the stock before getting old; but by degrees knowledge of these essentials would spread, and self-interest would quickly find out their importance. As a rule, egg-production would be found the best department to cultivate; and only when good markets are at hand should the raising of chickens form part of the regular course of proceeding.

Such are some of the first lessons to be drawn from the French egg trade; and by following them up incalculable good might be done in many rural districts, and money put into the poor labourer's pocket, with actual benefit to all his neighbours and to the nation also. But poultry and eggs are also studied by farmers and other producers in France, to an extent which in England is unknown, though there appears no foundation whatever for the reports of immense establishments existing there which have appeared from time to time, and which have represented the fowls as fed exclusively upon horseflesh, without any admixture of grain. M. Geyelin made a journey specially to discover such an establishment, of which most specific accounts had appeared, and proved conclusively that none such existed: but he *did* find a poultry-farm, conducted by M. Manoury, in Picardy, where about 5,000 head per annum were raised; and even this is far beyond any English example which can be quoted. It is to be regretted that the inveterate French habit of "romancing" in these matters makes it exceedingly difficult to determine what really is done in France, and even an account of a very modest establishment for 1,200 fowls, published under the official authority of the French Ministry of Agriculture—and which on that authority we reproduced,* while finding fault with many of the details—there seems some reason to believe had no foundation, though the recent war makes any positive conclusion now impossible, in the absence of better evidence than we have been able to obtain. But what we have ascertained beyond a doubt is, that there are large numbers of farmers in France who raise for market their hundreds—a few their thousands—of poultry annually; that this item of farm produce is regarded by them as of the utmost importance, and all connected with it *assiduously cared for* and looked after; and that in many departments it forms a very large proportion of the whole agricultural trade. Owing to the recent events which have convulsed the country, there are no reliable returns of very recent date; but in 1865 it was estimated that the total trade in poultry and eggs throughout France could not possibly be *less* than £10,000,000 annually, and was probably much more, Paris alone consuming to the amount of about £1,400,000 sterling.

The great contrast between this state of things and that existing in England demands attentive consideration from the English farmer, who might in many cases add very greatly to the produce of his land by thoughtfully developing this additional source of revenue. This truth has always been seen by more advanced agriculturists, and the reasons for the bad opinion most farmers cherish of poultry clearly enumerated. Mr. Mechi long ago pointed out perhaps the chief—that farmers will not *systematically feed* their fowls; and instead of careful superintendence, just leave them to themselves like "gutter children." He very pertinently says, for instance, that "a farmer will readily turn a large flock of *sheep* to trample on, drag down, and devour a fine field of clover or grass; but he would be annoyed to see half an acre eaten by his wife's *poultry*. He will give his *pigs* barley and beans by the sack; but objects to the *poultry* helping themselves to kernels. A farmer never grudges barley by the load for his pigs, and cake and corn for his other stock; why should he regret feeding his poultry? In some cases that I know of one of the farm hands receives a pint of beer when the governor is at market, to carry in a sack of barley on the sly for the poultry, so as not to shock the farmer's excessive and unreasonable prejudices." (That this is no fancy picture we happen to know ourselves.) He then goes on to show that the simple question really is, what any given amount of food *produces*, and proves, as we have done in our earlier chapters, that properly-managed poultry costs *less* to produce, weight for weight, than beef or mutton, while it *sells* for considerably more; but of course, he says, "your poultry-breeder must understand the business, as must the breeder of other farm creatures."

* "Practical Poultry Keeper," p. 224.

Here is the real kernel of the whole matter. In France these farmers—large and small—*understand the business;* in England even the farmers' wives hardly ever do, and their husbands look upon the whole with contempt. Cattle and sheep would never "pay" if the mating and breeding were left to chance, half the milk lost, and the animals left to whatever they could "pick up." But farm poultry, as a rule, are left to breed indiscriminately; are fed in the way alluded to; the hens suffered to lay away, where a third of the eggs are lost and another third stolen; and because *they* do not "pay" under such circumstances, are grudged any food at all; when merely as consumers of worms, slugs, and other creatures which prey upon the crops, they would be well worth all they ought to cost upon a large farm. Mr. Mechi affirms of them in this capacity, "It is a well-admitted fact by all my labourers that my best and thickest crops are in immediate proximity to the fowl-house, commencing at only ten yards' distance. No doubt there are times when you should protect your shallow-sown seeds, and in my case I sometimes employ a boy for a fortnight immediately after drilling, close to the fowl-house; but even if I have not done so I have rarely been inconvenienced if the grain was properly deposited by the drill. There is no surer sign of imperfect tillage than when you hear of birds or game getting out the seed." With regard to damage to green crops, such as young turnip plants, such will usually be the result of not "understanding the business." A friend of our own, for instance, convinced by Mr. Mechi, let all his fowls run loose, and complained that a field of young Swede plants near was nearly stripped by them. Mr. Mechi would have told him why, and how to prevent it. "Poultry," says he, "graze equally as do sheep or cattle, and it is essential that a *piece of pasture* should be near the fowl-house; otherwise they will and must appropriate your young cabbage, turnip, and mangel plants." This was forgotten, and hence the mischief.

What we have said in our earlier chapters as to selecting stock, is alone sufficient to account for half of the unsatisfactory results of farm poultry. At a meeting of the Whitby Chamber of Agriculture, in the summer of 1870, during the discussion which followed a paper on this subject, Mr. S. Burn said that "lately he had superintended the poultry department of a farmer who thought he was not receiving so much from his eggs as he was spending in corn. He found that this individual had on his farm many of the same fowls that were there when he entered, and some of them he thought must have been part of the original birds introduced into the neighbourhood. They had a general slaughter among them, some fresh birds were introduced, and the effect was so beneficial that the owner was astonished to find the improved system *made about £30 a year difference;* he brought about three hundred eggs to market every week, and had a fine stock of poultry." This difference in cash value, be it remembered, was upon an ordinary farm stock, no attempt being made at regular poultry-farming; and we quote these things to show that the statements we make, after years of studying this subject in every way, are not mere theory, but are borne out by actual facts on every hand.

But we have not yet done with France: let us now go back to it, and see what *understanding the business* means there. We have already shown to what a perfect system the operations of fattening and killing have there been brought, and need not enter further into that; neither will we more than allude to the very different way in which poultry is recognised by the agricultural authorities—competition here being limited to the shows held by fanciers; whilst at a show of dead and fatted poultry held at Paris in 1864, £160 was offered in prizes, and 2,000 head were exhibited. The great good such exhibitions would effect in this country cannot be doubted; but our present purpose is rather to remark how poultry really is considered in France as part of the general *economy of the farm.* This is shown in various ways, but chiefly by the manner in which poultry-food enters into the farmer's rotation of crops. In a paper by M. de Lavergne,

quoted by Mr. Frere in a paper contributed to the Journal of the Royal Agricultural Society, from which we have already extracted largely, the connection between the nature of the crops and the production of poultry is clearly indicated, though not actually expressed. Thus, after a description of several departments and their distinguishing peculiarities from a poultry point of view, the remark is made that "as a rule the districts *which grow buckwheat* are famous for *poultry*; not so those which grow rye." In speaking of La Bresse (now the arrondissement of Bourg, in the department of Ain), which is pre-eminent for the excellence of the fowls sent to market, it is again observed that "here alone is the growth of *maize* combined with that of *buckwheat*;" and we are not surprised to read a little further on that this mixture of maize and buckwheat, ground into meal, constitutes the food of the fatting fowls. Again and again maize and buckwheat are referred to throughout all notices of French poultry. Such is the foundation; with regard to the trade built upon it, we quote (still from the same able paper) that "one of the small proprietors or farmers on the borders of La Bresse or Revormont will sell between September and March two or three hundred fat fowls, making by his poultry alone *from £3 to nearly £5 per acre of his occupation.*"

We have preferred to make, from the sources we have mentioned, short extracts having a definite object rather than discursive quotations, in order that the considerations we would urge upon the British farmer may be more readily understood. Whatever be the share in poultry production ever taken by the labouring classes, as recommended a page or two back, and whatever be the success or otherwise of immense establishments for rearing poultry and producing eggs, *the farmer* will always be in at least as good a position, and probably better, than either of these can be; but his success must depend on the conditions of it being properly observed. These are few and simple. He must give his *attention and care* to this part of his live stock; he must strictly *look after* all the products; and he must provide and give proper food. As to the latter point, we are more and more sure that the use and growth of buckwheat is intimately connected with any great *national* increase in poultry culture. We became convinced of this years ago, and were the first to advise the free use of this grain in feeding fowls. For years we stood alone in this recommendation, and we still see many expressions of a contrary opinion; but we repeat our full and matured conviction that buckwheat is the best whole grain fowls can have as a staple food. All game prefer it to any other; and it has the further advantages of producing more eggs, forming meat of better quality, and of being grown on a large scale *more cheaply* than any other—it will grow on poor land, and the crop rarely fails. Buckwheat and the ground oats of Sussex would alone put a new face on many a farmer's poultry balance-sheet, forming as they do both the *best* and *cheapest* foods in happy combination.

How the cultivation of poultry could be best carried on by English farmers would depend much upon the extent of the holding, the intelligence of the tenant, the system of farming already carried on, the neighbouring markets, and other circumstances which need not be here alluded to. In some cases the greatest benefit would ensue by allotting, in rotation, a certain portion of the farm to regular poultry "runs;" which can easily be done at small expense by making all the houses upon wooden sills, and small enough to be movable, and using for fences simple yard-wide netting, fastened to short stakes. In this way the loss of eggs by laying away can be altogether prevented, and all the land in turn will be benefited by the manure and surface-scratching of the fowls, as well as by the destruction of insects which they will find and devour. This plan of proceeding would probably be found best for dairy-farms, as it does not answer to let poultry and cattle graze together. In other cases it may be better simply to follow Mr. Mechi's system of keeping a number of fowls on the run of the farm generally; but with an intelligent attendant and

vigilant supervision, to see that the produce is really brought into the farm receipts, and not lost or stolen. The chickens especially, in this case, should be carefully tended, a low rough shed being provided for them in some favourable spot which has been selected for the year, on the edge of a field if possible, with a strip of grass to which they can resort for grazing. Or still another plan may be followed, of keeping the stock fowls in permanent but fenced yards of extent enough to remain green, and rearing from these as many chickens as are desired, which, after harvest, can be sent to the fields in travelling wooden houses mounted on wheels, where they will get fat with very little extra food or expense, and clear the ground of slugs and insects at an amazing rate. In any case, the chief things wanted are *system* and *attention*. Granted these two, with any account fairly kept, and the farmer will soon find it his interest to go into this department of stock-raising more and more.

When there is a good town market within reach, early chickens pay best, as at some seasons they will readily realise *four guineas per dozen* for the London market. The surprise many persons will feel at this statement is simply a proof of the gross ignorance which prevails regarding all the facts of poultry culture. Such chickens must be really fine ones, and they require to be fed at daybreak, however early that may be; but we need hardly attempt to prove that such prices will give a handsome profit. We are not advocating the glutting of the market with the skinny chickens we so often see; but for fowls *good enough* the demand is practically inexhaustible. To say that careful and liberal feeding is required is only to stipulate for what the farmer has to give to his other stock—the object in both cases is to *make meat*, and meat cannot be made without it. But the difference is, that while the stock often get all this ungrudgingly, merely for the sake of the manure they make, poultry make *more* manure—value for value—and a clear cash profit of fifty to a hundred per cent. besides. Let a farmer once get to "understand the business," and he will never after leave it to his wife (unless she *makes a business* of it, in which case he can have no better manager), or allow such a source of revenue to slip through his fingers. Let the fact we have quoted, that many of the smaller French farmers make by poultry "£3 to £5 per acre of their occupation," and the further fact that they can afford to sell large numbers of fowls as well as eggs at such prices as will pay carriage to England, and a large commission to the wholesale merchant—let these things be remembered, and we may hope that such a source of profit will arouse more attention than it does now. There are signs of improvement already, and so late as April 24, 1872, *The Times* mentioned the British farmer as one who "*used to think* of nothing but wheat, and turned with contempt from poultry, eggs, and butter!" but even yet the subject has not met one-tenth the attention we think we have fairly shown that it deserves.

In many other cases—perhaps the majority—it will be best to give attention, either chiefly or entirely, to the production of eggs, only killing for the market surplus chickens or old fowls. And here, while we have spoken already of that general care and system upon which all success would necessarily depend, one very important consideration arises in which that care would more especially need to be exercised, and which demands more than a passing word. The amount of profit would very obviously depend in a great degree upon the number of eggs laid annually by each fowl; and this is found in practice to vary enormously. We have known one Brahma pullet lay rather over 250 eggs within twelve months, and others which did not reach 100. The fact that by careful selection of stock for a few generations any desired quality can be prodigiously developed is well known, and forms the foundation of all those rules and descriptions which form the larger part of this work; but for reasons we shall point out in our next chapter, it happens that the "fancier" of poultry, in whose hands the cultivation of pure varieties has chiefly lain, has

for the most part sought to develop other qualities than those which are of most importance to the commercial poultry-keeper. He seeks principally for "feather;" and as his best birds in point of colour will seldom be *also* the best layers or fatteners, these points are comparatively neglected. It can hardly be doubted that from these causes some pure breeds, taken as a whole, have actually *deteriorated* in economic value of late years; that some Houdans and Brahmas, for instance, do not lay so well as these breeds formerly did; and the point to be specially kept in mind is, that the commercial producer, by making *his* selections in the same way as the fancier, but with reference to other points, may attain the same success. It has been repeatedly proved that by selecting as breeders only the best milking cows, in a few years the yield of milk on any farm may be considerably increased; and in the same way, by setting all the eggs from a hen which lays a large annual number of eggs, and from the progeny using as breeders only those which partook most of their mother's good qualities, in about four years a *race* might be easily established which would yield considerably over 200 eggs yearly. We are not sure that between 250 and 300 eggs per annum might not be reached, as rare individual hens have been known to attain to even this high standard; but at all events, that a vast improvement might thus be rapidly effected is absolutely certain, and attention to this part of the subject is of the greatest moment. It is probable that with any large fowls which could be obtained at starting, the average yield of eggs would hardly exceed 140 per annum; and if in a few years this could be increased fifty per cent., which we are convinced might be the case, the difference in profit need not be pointed out. It may be objected to this, that such improvement would demand an intelligence and care which no farmer could be found to give. We question if it be so. There are farmers enough who have intelligence and skill sufficient to breed good cattle and sheep, and who know the difference in actual *cash return* between a bad and a good stock; and once let them see a certainty of success in poultry-culture, and we are convinced the care and the skill will not be wanting there also. Without them, at all events, success will never be reached by any one; but is this failing at all peculiar to poultry? Does not the same rule hold good in all other things?

It still remains to consider the interesting question, how far the cultivation of poultry is possible, or rather would be commercially profitable, in large establishments devoted to that specific object alone, or what would be understood as "poultry-farms." Perhaps on no question connected with poultry have opinions been so much divided; but after much additional experience in the management of fowls, of study as to what they can be made to produce, and of calculation as to the amount of labour per head required to keep them in thriving condition, we have seen no reason to alter our own judgment arrived at years ago, that such establishments *may* be made soundly remunerative to the man of business. We might say indeed, unlike most other writers upon poultry, that none of our earlier published opinions have needed to be seriously modified. At a time when the National Poultry Company's establishment at Bromley, in Kent, projected by Mr. Geyelin, was still in existence, we wrote "that his plans should fail was a practical necessity," and that they must break down altogether, especially in regard to chickens; and we declined to give any detailed description of them upon that ground. Mr. Tegetmeier's more pretentious "Poultry Book" of the same date, on the other hand, contained a drawing and full description of the place, with the observation that "as far as the experiment has been tested it appears to have been successful," adding only that "the success of the scheme, as far as regards the number and fertility of the eggs, and above all, the rearing of the chickens, are points that *cannot be regarded as definitely settled* until after the experience of several breeding-seasons," a remark which no one practically acquainted with the subject should have made. We had also then discovered and stated that the number of fowls should not exceed 120 per acre, years before any one else had adopted any such

proportion, which the same writer now represents as a discovery, and as *opposed* to our own teaching.* The plan of building we then recommended we still think the best, and have given it at page 14 of this work. In every main point, in fact, the soundness of our views as expressed in 1867 has only become more manifest with the lapse of time; though the facts and figures since collected, and of which many have appeared in the preceeding pages, present a more satisfactory body of knowledge applicable to the problem than existed years ago.

Mr. Geyelin's projects for large poultry-houses and farms undoubtedly did much to awaken public attention to the cultivation of poultry on a large scale, besides enunciating some principles which have since proved of value when more wisely applied; but, as we predicted at the time, their failure was utter and complete. His plan was to keep the fowls in families of half a dozen, each family having a pen or run entirely under cover, measuring six feet by twelve, divided into an outer and inner run three feet wide. Dry earth, renewed at stated intervals, deodorised all the manure; and green food was of course artificially provided. The runs were arranged on each side of a long corridor, much in the same way as the shedding in the plan given at page 14, which, indeed, we are not ashamed to confess was in this particular suggested by Mr. Geyelin's building, though differing in every other point of arrangement. The long corridor—360 feet was the length—containing thirty pens or runs on each side, nearly all filled with tolerably high-class birds, formed really a pleasing "show," and the fowls were kept in very good health and condition, taking many prizes at exhibitions whilst thus domiciled. But there were two fatal defects in such arrangements. The first was that birds brought up so artificially possessed no "tone" or stamina, and did not even make good growth; the other—still more important from a commercial point of view—that the cost of labour and interest on buildings, per head of poultry treated in this manner, was enormous, and quite prevented any possibility of profit. The problem was attempted repeatedly. Besides the original establishment at Bromley, another on a similar plan was attempted near Wimbledon, another at Shenley in Herts, and even a fourth in Gloucestershire, on a somewhat smaller scale, consisting of a corridor on Mr. Geyelin's plan about 100 feet in length. The latter was visited by us on several occasions, and afforded valuable information as to the practical working of the system, which enabled us much earlier than we otherwise could have done to state with the certainty of fact the inevitable result, which, indeed, *was* an accomplished fact from the very first in the eyes of all actually acquainted with fowls.

But although thus unsuccessful—even disastrously so—these costly experiments were not useless, and do not deserve to be treated with ridicule, as they have recently been by some who had not knowledge enough to condemn them at the time, when a warning might possibly have been of some service, and would at least have shown some ability of appreciating what was really the problem to be solved. They proved conclusively what the average production of a fowl was; and that the cost of its food varied from one penny to three halfpence per week, according to the breed and state of the markets. And above all, they *narrowed the issue*, and showed where the real obstacles lay as regarded the success of any attempts to cultivate poultry (specially) upon a large scale. These may be said to consist mainly of two difficulties, which we shall shortly state as, 1. The difficulty of maintaining large numbers of fowls in *vigorous* health and productiveness; and 2, that of sufficiently *economising labour and buildings*, while securing such effective care and

* No one can regret more than ourselves that a directly personal reference should necessitate statements which are so unfortunately and diametrically opposite to the sense conveyed in a contemporary work, by an author we can never mention but with respect, on account, especially, of his contributions to the treatment of poultry diseases. We have no wish to say more than that a reference to the first editions of the "Practical Poultry Keeper" and the work referred to, both of same date, will show very simply the true state of the case, and what was the respective teaching of the two at that time.

oversight as shall secure the former object. In the solution of the question we are now considering, the real point is whether these difficulties are insuperable. We do not think they are, and it may be well to see in rather more detail how the matter stands.

We have already shown that a stock of fowls could be secured very speedily which would give an average of 150 eggs per annum; and as we have also seen that the average price of French eggs for years past has been about 6s. per 120, this would give a gross cash return of 7s. 6d. for each bird. We have also seen that even in confinement the food should never cost more than three halfpence or three cents per head per week for the large breeds; and allowing for the difference in buying wholesale, for some birds of smaller breeds, and especially taking into consideration, what we have already said is in our opinion a matter of vital importance to the increase of poultry in England, the *home growth of buckwheat*, we are quite sure that on a large scale the food alone would not amount to 4s. per annum per bird, and might possibly not exceed 3s. We will, however, take the highest estimate, add only 6d. per annum for the manure, and hence consider that each fowl represents a gross profit over her food of 4s. per annum. This would give a gross profit of £200 per annum for each thousand fowls; and the question is, whether this sum will pay wages and other expenses, interest on capital, and leave a satisfactory profit over. We think it can be shown that this would be the case.

One great recommendation of the plan for a poultry-building given in Fig. 10, is its *economy* both in cost of construction and in the labour of supervision. We will suppose that for reasons given further on, the thousand fowls are divided into flocks of fifty, with half an acre to each; and this half acre should be arranged as a plot of grass land about eighty feet by three hundred feet. Then such a double shed as figured at page 14, of eighty feet in length, would accommodate 100 fowls, besides offering a certain amount of spare shedding for other purposes; and we have ascertained that it could be put up for something about the sum of £35. Perhaps, including the fencing of the open run, we ought to allow a cost of £40 per hundred for buildings and permanent fixtures; though on a large scale we believe a saving upon this might be effected. We have also ascertained, by careful trial in our own yard, by numerous inquiries, and by observation, that one man who "understands the business" can easily superintend 1,000 fowls, in twenty such flocks as we have indicated; and we will also assume the thousand fowls to cost on an average 2s. 6d. each, and that it is necessary to provide spare cash to pay food and wages for at least ten weeks. Then the capital invested for each thousand fowls will be as follows:—

Buildings, as per estimate	£400
One thousand Fowls	125
Food and Wages for ten weeks	50
Utensils, Machines, &c., say	25
	£600

And the revenue account would stand somewhat as follows:—

Dr.		Cr.	
To Interest on £600	£30	By Gross Profit on 1,000 Fowls ...	£200
,, Wages, at £1 per week	52		
,, Rent, ten acres, at £2	20		
,, Taxes, say	4		
,, Net Profit	94		
	£200		£200

Now, in considering such a statement, the first thing which might probably strike any one conversant with agricultural pursuits would be, that the capital invested amounts to £60 per acre,

whereas in the very highest farming it rarely exceeds £15. This however need not be discussed, as it is simply the *result* of capital invested which has to be considered. Here again our theoretical balance-sheet would probably be not regarded as very satisfactory, the profit available for dividend only amounting to about 15 per cent., or, including the sum already charged for interest, to 20 per cent. upon the capital, and some small deduction even from this being necessary to meet the expenses of getting the produce to market. But here several considerations have to be reviewed which may very materially alter the state of affairs.

In the first place, considering the possibility we have already stated of a greatly increased production of eggs, let us suppose that in five or six years, by judiciously selecting eggs for sitting from the best layers alone, the annual average could be increased to 230 per bird; this would increase the return per fowl to 11s. 6d., and the gross profit per thousand fowls, after paying for the food, to £400, or just double what we have been considering, and would raise the dividend to 48 per cent., or including interest already charged, to 53 per cent. Every increase of twelve eggs per bird per annum, in fact, would represent an additional 5 *per cent. dividend*, and it is at least perfectly certain that a very considerable increase might in this way be obtained. A market should also be sought as far as possible at retail prices; and it is probable that any establishment where it became known that *really* "new-laid" eggs could be obtained daily in quantities, would speedily obtain a ready sale for very large numbers; while such a sale would have the same effect in increasing the net profit materially.

Again, it is by no means meant to be conveyed that the poultry-runs should be kept as so many open plots of grass. A considerable number of trees for shade and shelter from rain (for it is not desirable the fowls should be forced into the houses in rainy weather) are needed, and crop-bearing trees would be necessarily selected, which should not only shelter the birds, but at the same time yield a considerable return of their own. Apples, pears, plums, and cherries would probably be the standard trees; and a clump of filberts should also be in every run, to afford better shelter than standards would give. In this way alone at least 5 per cent. on the capital would be obtained, which only assumes 30s. worth of fruit from each half-acre run. We may be asked, "Who is to think of all these things?" We reply, that if poultry-farming is ever to pay it must be conducted like every other kind of wholesale business, and every possible thing *must* be thought of by which returns may be increased or expenses may be saved. It is by reducing everything to well-ordered system, in which everything necessary is done at the smallest possible expense—or, to put it in a plain way of our own, in which capital is freely employed to save expenditure of revenue—that the leviathan establishments which are the pride of civilised nations have been built up, and yield the large revenue which they do to their princely owners: but the difference is this—that while the perfect system in these giant manufactories has been slowly matured, and is the perfected product of long experience, in poultry-farming on a large scale we have no successful experience to fall back upon. Such experiments as have been made were failures; and it is therefore all the *more* necessary to supplement such a want by the most anxious thought and care regarding all details which can bear upon the result.

The next inquiry which would naturally occur to a good man of business will be, whether something cannot be *saved* in the principal items of interest on buildings and cost of labour. We have assumed that one man at 20s. per week can take charge of 1,000 fowls in flocks of fifty, and this we are sure he can do; but can he do more? We are sorry to say we cannot, for reasons already given, answer this question. There is no experience we can go upon, and we are, in fact, discussing a matter hitherto untried, and simply endeavouring to bring to bear upon it every consideration we can think of likely to be of practical value. We are inclined to think one man

ought to be able to feed, clean, and collect the eggs from more than twenty pens or yards; but it is after all merely an opinion, and liable to be disappointed. We would, however, say this much, that to attempt reducing the labour by doubling the flocks will not answer. On this point there *is* experience, both in England and the United States; for it is found that in flocks of more than about fifty the eggs produced decline, so that one hundred birds together will *not lay double* what fifty will do. Even smaller numbers do better as regards laying considered alone; but as labour increases largely with every extra division, there is a mean point where the greatest economy compared with product is reached; and this by general experience we have fully satisfied ourselves is about fifty birds in each pen or yard.

In considering the buildings there is perhaps more room for hope. The advantages of the plan we have given are manifest so far as regards simplicity, shelter for the attendant in wet

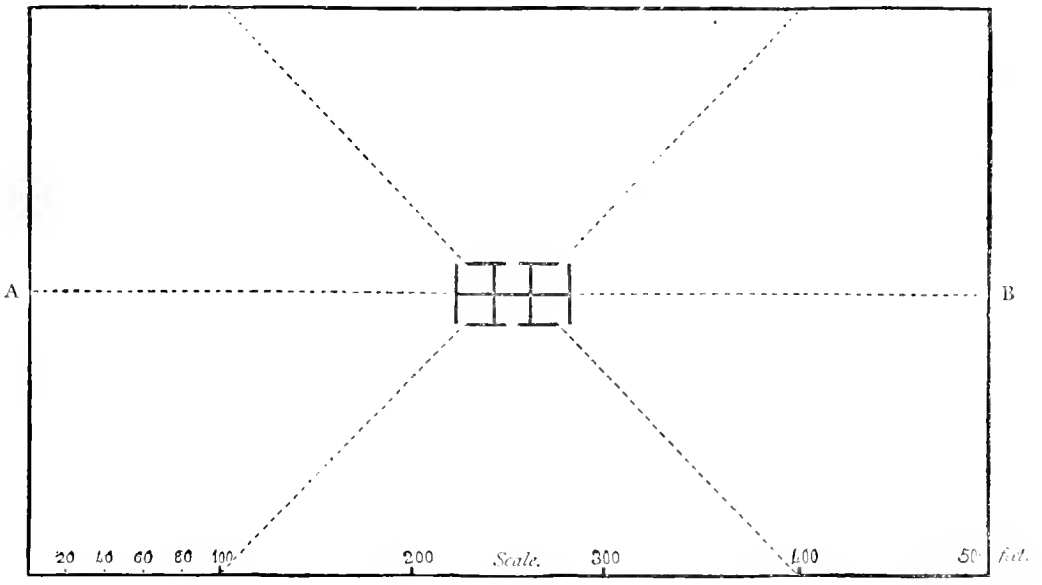


Fig. 47.

weather, saving of labour, and even economy in cost compared with the advantages in these respects. But we stated in page 97 that by this plan more shedding was provided than was needful; and though this extra supply has its necessary uses, no doubt the needful roofed space can be provided in a cheaper form; while it may also be thought the various arrangements of a long shed might cause more draught than is desirable. Taking 300 fowls as a basis, we have supposed for their shelter and other accommodation a double shed covering two hundred and forty feet by fifteen feet, with a three-foot passage up the centre. But assuming the three acres for the 300 fowls to be in the form of a parallelogram, measuring roughly about three hundred feet by five hundred feet, although the shedding cannot be reduced by narrowing the runs much, else the fowls would not utilise properly a slip of ground of such exaggerated length, yet by such an arrangement as Fig. 47 the desired object may be attained; and by giving to each flock of fifty a house or shed twenty feet by fifteen feet precisely half the shedding may be made to suffice, and that built in a still cheaper form; whilst the line A B will afford convenient means of communication from one set of yards to another. Another advantage of such an arrangement will consist in the comparative isolation of each 300 fowls from the others; and the amount of shedding supposed

will be ample, as we have already observed that other shelter from bad weather ought to be provided by an adequate number of trees or bushes.

In attempting to decide between the two systems of building we have considered, we are again confronted with the want of actual experience, as in England no large concern on *rational principles*, so far as we know, has ever been even attempted. The disadvantages of the one last indicated obviously lie in the want of shelter for an attendant while crossing the open space, the absence of the conveniences of a central passage, and the greater distances to be traversed. In spite of these, however, and especially considering the advantages of having the fowls housed in squads *isolated* from each other, we should on the whole advise the plan of Fig. 47, but must again confess our inability to lay down a positive conclusion. If such a plan should be found successful, the amount of capital required (for buildings, &c., even allowing for cost of trees) would be reduced by about half, and the dividend on any given amount of capital would assume a very different complexion, as will be seen by the following amended balance-sheet, where we have still supposed the laying to be only at the rate of 150 eggs per annum, but which might soon be largely increased.*

Dr.		Cr.	
To Interest on Capital, now reduced to £400 ...	£20	By Gross Profit, as before	£200
,, Wages	52	,, Crops from Trees, in twenty runs, at 30s. each	30
,, Rent	20		
,, Taxes	4		
,, Net Profit	134		
	£230		£230

But speaking of a "dividend" reminds us to state emphatically that we have no belief whatever in the capability of "companies" to carry on such business with profit. We do believe that an intelligent individual, or even a firm, possessing not only sufficient capital, but—a much scarcer thing—the thorough knowledge of fowls and their successful management, might reap a good harvest. He or they would soon learn what to do and what to avoid, for the knowledge as acquired would be brought immediately home to the consciousness of those most concerned, and they might be relied upon for a careful and keen eye to their own interests and all that affected them. But this would by no means be the case with a company. None of the members would probably have that knowledge which would be as the very life-blood of the concern; and in electing a manager at a high salary they would not only be losing in hard cash a considerable part of the returns, but would have to depend chiefly on "testimonials," the value of which has lately become proverbial. We say this, because we have more than once had to restrain people from rushing into some such sort of thing, and we are *certain* no company will ever successfully carry it out, until at least private energy has solved the problem before them. In a case where so much has yet to be learnt, it would be simply ruinous to have any man experimenting with other people's money. Let it be his own. If any individual has really learnt how to keep poultry on a moderate scale successfully; if he is fond of it, and would like it as *his business;* if he has capital *for* the business, and feels and knows that what he has done with one lot of fifty fowls he can do with twenty; if he knows the best markets, and is not above seeing to this department himself; if he has the gift of finding people for his assistants who know what he wants done and will do it; then let him try poultry on a large scale, and he will probably prosper: but we do regard it as essential that both the expenditure,

* Lest it may be thought we have exaggerated what may be done in the shape of developing egg-production, we would refer on the one hand to the fact that the natural production of the fowl has *already* been increased tenfold, and on the other to the recorded instances which will be given in the chapters on Brahmas and Hamburghs, for the strict truth of which we can personally vouch.

and the planning of details, and the power to determine what shall be done, should all be in the hands of the *one* who knows most about it, and who is most interested in the success of the whole. The dogged, ignorant determination of some people on this subject is really ludicrous. A few years since we had a letter from a retired army officer, asking advice about embarking in such an undertaking. On inquiry, we found he had no previous knowledge of fowls, and we at once said, "*Don't*," enlarging upon the stupendous folly of such a proceeding under these circumstances. It was of no use; he was determined to try, though our strong remonstrance did induce him to begin on a very moderate scale: and, to make the best of what must be bad, we gave such hints as we thought likely to be of service. *Nearly all these were disregarded;* the birds were crowded into buildings far too small, and without one quarter enough run, and the failure was of course miserable. This is not the only such case we have known; and the curious part of it is, that in all alike we were evidently considered as in some sort responsible, merely because we have, as we do now, expressed an opinion that if properly managed success might be obtained. All we can do is to repeat what we have already said, that no one has any business even to attempt poultry-keeping on a large scale, unless he thoroughly understands fowls and their management, and on a moderate or small scale has made them succeed. If, in addition to this, he have the power of quickly seizing the essential points of any practical subject, and of readily comprehending details, let him try by all means; but no one else has any business in this field.

The most recent experiments in keeping poultry on a large scale have been made in the United States; and though the circumstances there differ in almost every respect from those in the United Kingdom, so far as conclusions can be gathered they appear decidedly in favour of the profitable result of such a business if judiciously carried on. Mr. Warren Leland, of the Metropolitan Hotel in New York, has long reared large numbers of chickens for the supply of that establishment, and gives the outlines of his experience as follows:—

"I have found that for every hundred fowls you must give up at least an acre; but rough land is as good as any. Hens naturally love the bush, and I lop young trees, but leave a shred by which they live a year or more. These form hiding-places and retreats for them. In such places they prefer to lay. I have great success, and it depends on three or four rules, by observing which I believe a good living can be made by hens and turkeys. I give my fowls great range. Eighteen acres belong to them exclusively. Then the broods have the range of another big lot, and the turkeys go half a mile or more from the house. The eighteen acres of poultry-yard is rough land, of little use for tillage. It has a pond in it, and many rocks, and bushes, and weeds, and sandy places, and ash-heaps, and lime, and bones, and grass, and a place which I plough up to give them worms.

"When a hen has set, I take her box, throw out the straw and earth, let it be out in the sun and rain a few days, and give it a good coat of whitewash on both sides. In winter, when it is very cold, I have an old stove in their house, and keep the warmth above freezing. There is also an open fire-place, where I build a fire in cool, wet days. They dry themselves, and when the fire goes out there is a bed of ashes for them to wallow in. Summer and winter my hens have all the lime, ashes, and sand they want. Another reason why I have such luck is because my poultry-yards receive all the scraps from the Metropolitan Hotel. Egg-making is no easy work, and hens will not do much of it without high feed. They need just what a man who works requires—wheat bread and meat. Even when wheat cost two dollars, I believe in feeding it to hens. As to breeds, I prefer the Brahmas, light and dark. I change roosters* every spring, and a man on the

* In America, except among poultry-fanciers, cocks are always called by this name.

farm has no other duty than to take care of my poultry. I frequently turn off three thousand spring chickens in a single season."

The great difficulty in American poultry-keeping is the care of the stock in winter, and the Farmer's Club of the American Institute appointed a committee specially to visit Mr. Leland's farm, and ascertain his management during that season of the year. The committee reported in February, 1871, as follows (we have condensed their remarks for the sake of brevity):—

"We spent a day at the farm of Warren Leland, and have derived, from a careful survey of his yards, ideas which we consider important. We find him carrying 150 turkeys, about 300 hens, a large drove of ducks, and several dozen of geese through the winter, without the loss of any of his poultry by disease of any sort, and without the freezing of their feet or of their eggs. We learn that he never has maladies among his poultry; that he will allow the greater part of his hens to sit in the spring, and each of them will yield an average brood of ten chicks, so that he will raise about 3,000 chickens from his present flock, and his losses be very few. How does he do it?

"His hens, ducks, and geese have the best winter quarters we have ever seen provided for any of the feathered tribes. Their main-barrack, or hennery, is a stone house, seventy-five feet long, and twenty feet wide, and faces south. The openings on the north side are small, and filled with window glass, and in some cases with double sash. Those on the south side are much larger, consisting of double doors, which are opened on sunny days. In the middle of the north side is a wide, old-fashioned fire-place, with crane, and a big camp-kettle. Nearly every day in the winter a fire is lit, and fed with chunks, knots, and old logs, that would otherwise be knocked about the wood-yard, and left to rot in fence corners. The walls are of stone, and the floor of rock or earth, so the fire can be left without the least danger.

"On cold days, and especially in cold rains, the hens gather before this fire and warm themselves, and trim their feathers. The chimney can easily be closed, or the logs rolled out into the middle of the building, and feathers or sulphur used to make a fumigation. This is done whenever hen-lice appear; and the openings of the house can be closed, so as to hold the fumigation till it penetrates to every crack. Smoke he finds better than carbolic acid, or kerosene, or whitewash, to drive vermin. The roosts are oak slats, an inch thick by two and a half inches wide, fastened to the rafters near the ridge. They are nailed at different heights, and at proper intervals. About two feet below the perches is a scaffold of boards, that fit quite closely. This is from time to time covered with plaster and ashes. About once a month the accumulations are shovelled down, and piled up for the corn-field. He calculates that fifty hens yield, in the course of a year, as much compost as would be worth fifty dollars in bone-meal; that is to say, if he threw away his hen droppings and had to buy the same amount of fertilising salts in bone-dust, it would cost him fifty dollars to replace fifty hens as producers of manure. He has paid special attention to the comfort of his hens on the perch. They sit on a slat two and a half inches wide. Their breast-feathers come down and cover their feet, and protect them from freezing in the coldest nights. Of course, there is no lack of dry ashes in the house, and he finds that after the fire goes out the hens use the hearth as a place to nestle, and shake ashes through their feathers. They enjoy it, and it keeps them sound and comfortable.

"The offal of the farm, as entrails, feathers, heads, scraps from lard, and all the odds and ends from the kitchen, are thrown into this house, and the hens pick it over, eating all they want. Then, as soon as spring opens, all this trash is shovelled and scraped out, composted, and taken to the

corn-field. Besides this refuse, his poultry eat about a bushel of corn a day in winter, and half a bushel in summer. He raises large crops of corn, because he has strong manure to feed his crops with, his calculation being that about four acres of corn go to feed and fatten his poultry.

"During summer his poultry have a wide range, and scour the fields for half a mile or more, consuming grasshoppers. His turkeys nearly make their weight on grasshoppers and beetles, with a handful of corn night and morning. One man has little to do in spring and summer but to take care of chickens and young turkeys. In winter they require but little attention, and this man then attends to the calves and lambs.

"It has been said again and again in this Club, and in farm journals, that there is no use in trying to keep more than about fifty hens; that if one goes deeper into the poultry business there is backset from lice, and roup, and gapes, and cholera, and the sudden death of hens and chicks from causes unknown. This is a fallacy. In the manner above described, by the wise use of smoke, and lime, and ashes, and a fire, by cleanliness, and a wide range in mild weather, we find Mr. Leland taking about 4,000 feathered animals through the season, for year after year, without calamity or loss, and on an expense that is very trifling, and unfelt on a large farm."

Eggs are not much depended on by Mr. Leland; he considers it pays better to set them and rear the chickens; hence the reason why his stock of 3,000 in summer is reduced to 300 in winter. Of late his operations have become still more extensive, so that in one season, as we have learnt from private sources, he has turned out 5,000 young birds for the use of his own family and the large hotel.

In the summer of 1871, Mr. C. F. Pearce, Freetown, Massachusetts, published in the *Rural New Yorker* an account of a large poultry-farm "at the southern extremity of Chili, South America." Six thousand fowls were stated to be kept on this farm, in flocks consisting of fifty hens and two cocks apiece, each of which had a house of its own placed two hundred feet apart from others. The sales for one year were stated as 72,000 dozen of eggs and 20,000 chickens and fowls, and the year's profit as 11,000 dollars. We do not repeat more details, having a strong belief that the whole must be a hoax; for not only does the very vagueness of the locality afford ground for strong suspicion, but when we come to the natural inquiry of where "at the southern extremity of Chili, in South America," the alleged proprietor can possibly find a market for such an immense produce, the story appears to "settle" itself at a very quick rate, and may safely be consigned to the realm of invention, along with the "De Sora" and similar narrations.

More deserving of attention are a series of twelve articles which appeared in one of the highest-class agricultural periodicals in America, from the pen of Mr. H. H. Stoddard, of Hartford, Connecticut, and of which the concluding one of the series was only published in April, 1872. Mr. Stoddard's principles and conclusions differ in so many respects from those already stated, and are in some particulars so remarkable, that we cannot avoid giving as clear a summary as possible of his views.

Having observed that "some plans upon a large scale have secured small separate flocks without freedom, and others have secured freedom without separate flocks," Mr. Stoddard says that on the first plan the wants of the fowls can only be supplied by an amount of labour which eats up all profits; while under the other "an unnatural *mob*" is formed, and laying is checked. He then observes that when flocks of fowls are attached to separate houses in villages, the separate roosting-houses may be as near as even six rods* without much danger of the birds straying; which is "because the neighbour's premises have a different look," and various landmarks enable them to

* In America the word "rod" is almost always used to express the "rod, pole, or perch" of our school-boy days, measuring 5½ yards.

find their way back, each family keeping in the main to its own locality. On this principle, therefore, a model egg-farm is planned, as shown in Fig. 48. The whole farm or plot is traversed by roads indicated by the dotted lines, and placed ten rods apart. Adjoining these roads are the houses, placed hexagonally as in the figure, and which are painted black, white, and green, the colours being arranged as shown by the white, black, and shaded spots, so that each house is differently coloured to all the six which surround it. Each house is thus a little over eleven rods, or about sixty-two feet, from its neighbours on every side.

There is however another difficulty to overcome, concerning which we will quote Mr. Stoddard's own words. "While pursuing," he says, "the experiments which led to this system, we early perceived that while a flock thus situated would stay near home so long as no person approached, when feeding them, we were followed by birds from neighbouring flocks, and there was confusion.

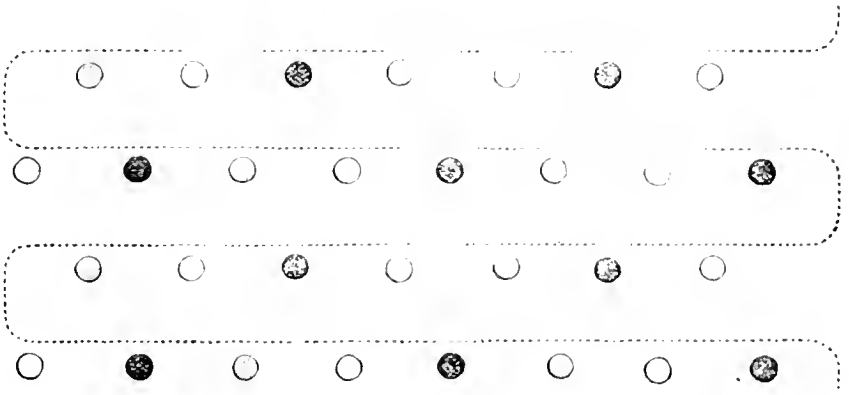


Fig. 48.

Then, so accustomed do fowls become to associating the sight of their keeper with a boon, that they will follow him from one station to another, when on his rounds collecting eggs, or attending to other matters. True, their ability to find their way back is wonderful, but fighting follows intrusions, and thus the quiet and order so essential to laying are impaired. Besides, frequent associations of this kind will, after a while, break down all distinction between neighbouring flocks. The solution of this difficulty is original with our system, and the key to its success. The feeding business is the cause of the trouble, and the only reason why fowls follow their keeper. The remedy is to bring about the feeding indirectly. From earliest chickenhood the birds are brought up so as to never perceive that the keeper has anything to do with their feed. The small coops for young chickens (on a separate part of the farm) have boxes where the feed is placed, and a simple contrivance attached that does not admit the chickens until some time afterwards. Adult fowls are given soft feed early in the morning in a feed-box in their house, so constructed that the keeper is not seen by them at all. All the hard grain for the day's allowance is deposited in a pile of straw outside, before they are let out of the building, and it is a day's work for them to scratch for it. The sight of the keeper is associated with no gift or boon whatever, scrupulous care being taken during the fifteen to eighteen months that limit the lives of most of the main laying stock never to throw to them, directly, a morsel of food or allow them to see the drinking-vessels filled. The two points, of differently appearing premises at different stations, and indirect feeding, both being attended to, we are enabled to keep separate flocks in freedom upon one farm without yards."

The houses are of the cheapest construction, consisting merely of a gable or pitch roof, and measure fifteen feet by eight feet and a half on the ground, with a height of four feet and a half to

the peak. The sides consist chiefly of folding-doors, which can be opened to get the eggs and afford air during the hot American summer, and the whole are built on stout sills so as to be movable. These houses are put up on a ridge, raised by ploughing a few inches above the general surface. During summer every house is moved its own width every few days, and the manure made in that time ploughed in with a horse-hoe; in winter every one is placed on a bin of pulverised dry earth six inches deep; and every year the whole are moved to a fresh piece of ground, and the land they have occupied ploughed in and cropped. Thus a farm on this system requires twice the ground really occupied by the fowls. All these operations, the feeding and watering, and the collection of dry earth in summer for the winter's use, are to be carried on by the use of a team, and with the aid of various appliances which are figured by Mr. Stoddard, but which we need not here particularly describe. In winter some rough extra shelters are put up for the fowls, and covered with brushwood, using the summer appliances for drying earth and other objects as framework so far as possible. The fowls for sitting, and those for breeding or keeping up the young laying stock, are provided for in separate permanent yards. The breeding of chickens specially for market Mr. Stoddard does not consider at all necessary, as he says the cockerels, refuse pullets, and old fowls to be killed, will always provide as many birds for killing as are desirable. He concludes with a summary, from which we take the following remarks:—

"A tract of land, one hundred rods by one hundred rods, equal to sixty-two and a half acres, will contain ten rows of houses for the laying stock, arranged on the quincunx plan, ten in a row. These 100 buildings will each contain fifty birds, or 5,000 in all. In addition there must be 500 of the sitting stock, and 500 at the breeding and experimental yards, or a total of 6,000. The 5,000 layers comprise 3,000 yearlings, and the rest are two-year-olds. To replenish the laying stock there must be raised 7,500 chickens yearly (for three out of five are cocks and inferior pullets to be rejected). To replenish the sitters and also the breeders—in the latter class much 'weeding out' being necessary—2,500 chickens more must be raised; that is, about 10,000 chickens must be reared annually.

"Now, when fowls are kept under the ordinary system pursued by the family living in a village—by which we mean that there is a fowl-house and yard to accommodate a flock, and then, if the number is to be increased, another yard is made, and so on—one man can take care of 600 fowls without the aid of a team. He can take off all the produce in the cars, and distribute to his city customers from a basket carried upon his arm; can spade up the ground in the yards, &c. &c.; and *keep his stock young* by raising enough chickens, so as to have on hand 400 pullets every autumn, after killing the supernumerary cocks and inferior pullets. But one man cannot take care of more than this, and do it well, under the ordinary domestic or small-scale plan. If he attempt to manage 1,000 or 1,500, market their produce, raise the needful number of chickens, &c., he will slight the work, and so sure as it is slighted there will be loss. He can keep 600 adult fowls, and make 600 dollars,* and no more.

"Now let it be remembered that the skill and incessant care and industry necessary to clear 600 dollars in the case supposed above would, employed at some other business, earn *eight or nine* hundred dollars (for *a bungler cannot keep fowls as a business*), and we see why it is that during the past fifteen years so many persons who have tried to enlarge their poultry business on the ordinary 'family fowl-house and yard' plan have failed, and quit it in disgust. What is needed is the reduction of the amount of labour. This must be accomplished by employing a team in every operation where it can be done, and by using movable buildings. The movable houses and no

* The dollar may be taken as representing 4s.

yards (necessitating the system of indirect feeding) are the central features relied upon in our 'egg-farming' to keep down labour to the minimum. All the other features are subordinate.

"Five hands (with two horses) can attend to the whole establishment of 6,000 adult fowls, and the excess of produce over feed will be 5,000 dollars for the laying stock of 5,000 birds. Nothing is said about any income from the breeders and sitters; they are supposed to be as much a necessary evil as anything; or about income from crops or manure, that being an offset, and a fair offset, as our experience and laborious accounts show, against the interest on land and buildings.

"There are only three systems of fowl-keeping possible. There are many modifications of these, it is true, but to one genus or another of the three following they may all be referred.

"One is the highly artificial or bird-cage plan of Mr. Geyelin, as detailed in his 'Poultry Keeping in a Commercial Point of View,' a book which is, after all, one of the most valuable repositories of information for fowl-keepers ever written. But the cage plan fails, because there is not enough exercise for the birds, and altogether too much for the attendant.

"Another is the ordinary plan of the villager or the fancier, given in poultry-books and agricultural papers in endless variations of one tune, and that tune a 'house and yard adjoining'—a good plan for the family who make no account of the labour involved, and a good plan too for getting a start in operations on a large scale; but a money-losing plan if it is attempted to supply city markets with table fowls and eggs at ordinary market rates.

"The remaining one is that pursued by nature before fowls were domesticated, and the one under which they have been mainly kept since, during a period antedating history and continuing to the present; by giving them their freedom in the daytime and a shelter by night. As the wild fowls need no attendant at all, so by arrangements as near like theirs as possible the least labour is demanded. Fend off storms and wind and the summer sun by the simplest shelter that can be made, dodge the labour of house-cleaning by ploughing and moving buildings, and make the mutual antagonisms of neighbouring flocks take the place of yard-fences, just as among wild jungle-fowls, and the maximum of thrift and the minimum of labour and expense will be secured."

We have endeavoured fully to explain Mr. Stoddard's principles and plans, because they bear evidence of more practical and experimental knowledge of fowls than any previous theories have afforded; because they have aroused great attention in the United States; and also because, after careful consideration, we are unable to approve of them. It is hinted on many occasions during the lengthy exposition from which we have gathered our summary, that the various details have been practically worked out; but it is never affirmed that the whole plan has been in actual operation for any time sufficient to test it; and in face of the considerations now to be reviewed, we are convinced that such a test will ultimately prove unfavourable.

In the first place, whilst fowls when once fairly domiciled have a very strong sense of locality, we are convinced from our own experience, and since the publication of Mr. Stoddard's ideas, careful observation on this point, that it will be impossible to rely on the plan proposed for keeping the flocks separate when connected with the necessary operation of planting out new colonies every season; the more so as, while all the *immediately* adjoining buildings are of a different colour, each flock has only to go twice the distance to find a house of similar colour to its own. We greatly admire the ingenuity of the plan, and if it *could* be made to succeed it would save not only the cost of fencing, but the time and labour of opening and shutting gates; but we fear it will not be found practicable. Should it be so, however, we have no hesitation in saying that so far no arrangement can equal it in convenience and economy. This question can only be answered by actual experiment *on a large scale*.

But, secondly, while Mr. Stoddard professes to secure all the advantages of perfect liberty, we believe him to be fundamentally wrong in this assumption. It will be found by calculation that if the total area be divided between the various houses, each flock of fifty birds has an area of very little more than 3,000 square feet; whereas we have already stated that all experience teaches the required space is about half an acre, or 22,000 feet. Allowing even the equal area cultivated, which indeed is necessary to a just conclusion, the fact still remains that the *total* space is only about *one-fourth* what is required for health and purity, while any grass in such overcrowded runs would be impossible. The double area proposed is, indeed, only about half what we have given as necessary for grass-runs when fowls are kept in families of half a dozen; and we are quite certain that in a farm so overstocked the mortality would be enormous.

Lastly, we are thoroughly convinced that Mr. Stoddard's opinion as to the comparative amount of *labour* involved in his plan is a delusion. He would move each house every few days, and plough the manure in with a horse-hoe; we are perfectly sure that, with a tolerable floor, it would involve less labour if at precisely the same intervals the house were cleaned. The idea of having all houses so small that no one can go into them, and of reaching into them for the various operations as into a cupboard, is also a fallacy; besides which, the house space and other shelter is far too little for the American climate, or even the English, with its many vicissitudes both of weather and temperature. Indeed, the very fact that the flocks, in full numbers, are supposed to be housed and carried through the winter with such inferior shelter as Mr. Stoddard describes is alone sufficient to prove that the scheme in its entirety has never been fairly and fully put to the test of experience through several seasons.

Whether with more ground the general plan would answer we must frankly confess we are unable to say. That fowls have a strong sense of locality we have indeed observed, and there are evident traces of experiment in the way Mr. Stoddard gives this part of his views which would make us hesitate to express any decided opinion. If it succeeds in a large establishment, then by building *permanent* houses of sufficient size (instead of fifteen feet by eight feet and a half they should be fifteen feet by twenty feet for fifty fowls), and placing them at least one hundred and sixty feet instead of sixty feet apart, all the advantages of the plan would be secured without its faults; but we question much if the labour of going so far from house to house would not far more than compensate the saving of fence and of opening and shutting the gates which belong to it.

On the whole, therefore, we consider that some such plan as that given in Fig. 47 offers the greatest probability of success. The cost of building is more, but is not excessive, while six flocks are collected together for cleaning, feeding, and collecting eggs. The range is ample, so that except the houses no cleaning is necessary, while the ground will remain sweet and wholesome, without that "spading up" of which Mr. Stoddard justly complains as too much labour to be profitable; providing both fresh grass and a very fair amount of insect food a great part of the year, with abundant room for clumps of trees as shelter. The manure dropped on the ground itself will not be more than enough to maintain the grass the fowls consume; and if fruit-bearing trees be added, the land will be reduced to as low a cost as possible. In his three alternatives, Mr. Stoddard has not in fact fairly included this system of keeping separate flocks, but with *ample range;* and, indeed, a large establishment on this, as we consider, the only rational basis, has yet to be tried. Land is *cheaper than labour,* while it preserves health as well; and, so far as Mr. Leland's experience goes, it proves that such a plan would be a success.

Such then, we believe, will be the poultry-farm of the future; this plan alone has stood every test which has yet been brought to bear upon it. It has been *proved* that a flock of fifty fowls, with a house twenty feet by fifteen feet, and half an acre of grass, with trees for shelter, will be properly

prolific, and do not cost too much for labour; and it has been *proved* that this allowance of ground will keep sweet an unlimited time. Mr. Leland has *proved* that even in larger numbers, with this range, fowls will do well. Many people have *proved* that even fowls as they now exist will yield a profit of four shillings per annum over their food towards other expenses and profit; and, finally, it has been *proved* that the laying of many breeds may, by careful breeding, be vastly increased. All the elements of the problem, therefore, have been worked out to a satisfactory result; but that is really all which has yet been done, or is yet known, and to combine them into a successful whole yet remains for the man of business.

We have felt bound thus to confess how little has been done, as well as how much; but as the problem will yet be inevitably attempted, and, we trust, brought to a satisfactory conclusion, we think it well in the last place briefly to say how, supposing a friend of our own was to embark in such an enterprise, we would wish him to proceed.

1. *We would do nothing in it* till we had learnt thoroughly to understand fowls and their management. Few people not in the secret know how much there is to learn; and few ever learn it unless from necessity or inclination they attend to their fowls *themselves* for a longer or shorter time.

2. While acquiring this knowledge we would look round, *deliberately*, regarding all such circumstances as would affect the result. Such would be easy access to a good market, rent of land, character of ground, cost of building materials (chiefly timber and tiles) in the immediate neighbourhood, and, not least, the looking out for individuals likely to make good and hearty assistants.

3. In the meantime, and *before* large operations were begun, stock should be selected, and diligent selection made of the best layers. Only the best layers should be bred from, and only the best of their progeny, and so on; *cocks* for breeding being also kept which were bred from the best layers only. This selection is very simple, and demands no knowledge of "points" at all; but it can only be carried on in smaller yards, and should, therefore, be commenced as soon as possible, with an eye to the future. Every twelve eggs annually will represent an additional £25 profit on each thousand fowls, and nothing can have more influence on the ultimate profit than *systematic* attention to this matter. It lies at the very root of all success in commercial poultry-keeping.

4. Buildings and yards will then have to be planned out; and, on the whole, the system given in Fig. 47 we think combines the greatest advantages in health, economy, and accommodation. The breeding yards should be smaller, consisting only of five to ten hens and one cock, according to the breed. The floors of all the houses should be some inches above the surrounding soil, and asphalt will be the best material.

5. We doubt if Mr. Stoddard is right in depending entirely on layers, chickens being of more value in England than in America. Such a decision would give us only Houdans, Hamburghs, Andalusians, and Leghorns, to choose from. Houdans and Leghorns are the best layers, on the whole, of any breeds, considering the size of their eggs; and the Leghorn is as yet *unspoilt* by fanciers, which the Houdan to some extent already is. For sitters, Brahmas and Dominiques will be the best, except where a good chicken-market and dry gravelly soil combine to point out the Dorking. But, on the whole, we should keep Brahma hens for sitting, breeding the best of them pure to keep up the strain, and the more inferior with Dorking cocks, so that the produce might rear well for table. The produce of Brahma hens with Houdan cocks also, as we have elsewhere said, makes a fowl first-class both for laying or for the table. The finest of the laying breeds should also be carefully bred in yards, both to keep up the laying character, and because the one or two cocks to each flock of fifty layers would not be enough to ensure fertility.

6. In raising chickens for market, the very best cross will be Brahma hens with Dorking cocks, reserving the best of the pullets to mate again with Houdan cocks; but care should always be taken to breed from the best layers, whatever breed or cross be employed.

7. The laying stock should be forced on by stimulating diet, giving a good allowance of animal food, and a slight seasoning of cayenne pepper, mustard, or ginger. Such a regimen would ruin the constitution of breeding stock, but is highly necessary to layers, which are not bred from, but *used up* as quickly as possible and then killed. Mr. Stoddard enlarges, and is we believe perfectly right, on this point. The forcing diet should be commenced gently, and gradually increased. We may remark here that while the "De Sora" hoax scarcely needed exposure, those writers who ridiculed the idea merely on account of the "impossibility" of feeding fowls chiefly on flesh simply demonstrated their own ignorance. Fowls thus fed inevitably die after a certain time; but *for a time* they appear to thrive upon it. When we visited the National Poultry Company's Bromley establishment the second time, Mr. Schröder informed us that he had about 1,000 head of fowls at his own place in Hertfordshire fed almost entirely on flesh during the winter months. He used to buy dead carcases of *any* animals which he could get cheap; and by selling the waste parts to various manufacturers managed to get the flesh nearly for nothing. He carried on this system for two years, leaving off the flesh in the summer, but always using it in the winter. In a letter dated July, 1866, quoted in the "Journal of the Royal Agricultural Society," he says he "has for very many months together fed principally on flesh." *How far* the plan either could or should be followed we cannot say; but probably the best result would be obtained by giving a moderate quantity of the stimulating food the first season, and increasing it the second to a considerable quantity, after which the exhausted bird should be fattened and killed. As none of these fowls would be bred from, no evil result on the stock need be apprehended; and we have seen it stated that by thus aiding the flagging powers, even existing laying breeds may be made to produce nearly 300 eggs per annum. We have reason to question this; but we have always found that meat given had an almost invariable connection with eggs laid to a great extent. Experiments in connection with this subject also should be made in small yards, in order to discover the treatment which gave the *best* results before embarking in the large.

8. How far prize birds should be reared will be uncertain, depending on the knowledge possessed by the individuals concerned. Rightly managed, this ought to be a lucrative branch of the business, and more successful than usual on account of the large number of chickens to select stock from; but to attempt it without personal knowledge would be foolish indeed. It is also to be considered that any one with the usual "enthusiasm" of a fancier would be very apt to neglect the more important part of the business for the "fancy" birds; and the combination of both kinds of management, with the judgment necessary to keep each in its proper place, is perhaps very rare.

9. As a boiler of some kind is highly desirable for the purpose of mixing the meal with hot water every morning, it will, in a large establishment, be found both quicker and cheaper to employ a small engine also, and some simple machine for mixing the food and mincing up the meat given. This last, to save time, should be mixed in the soft feed.

10. The manure from the houses should be carefully stored. We valued it at page 97 as only sixpence per annum for each bird; but this is far from the truth. From actual experiment we found that the droppings from four Brahmas for one night weighed in one case exactly one pound, and in another more than three-quarters, an average of nearly four ounces each bird. By drying this was reduced to not quite one ounce and a half. Other breeds make less; but, allowing only one ounce per bird daily of dry dung, fifty fowls will make, in their roosting-house alone, *ten*

cwt per annum of the best manure in the world. Hence half an acre of poultry will make more than enough manure for an acre of land, seven hundred weight of guano being the usual quantity applied per acre, and poultry manure being even richer than guano in ammonia and fertilising salts. *No other stock* will give an equal return in this way; and these figures demand careful attention from the large farmer. The manure, before using, should be mixed with twice its bulk of earth, and then allowed to stand in a heap, covered with a few inches of earth, till decomposed throughout; when it makes the very best manure which can be had.

11. Lastly, as much as possible should be sold *retail*, either direct or by an authorised agent; and in the latter case special arrangements should be made that the produce be kept *separate* from that of others. Mr. Stoddard justly remarks on this head, that "consumers readily appreciate eggs, butter, or other produce, that comes from a *regular, responsible source*. But when a lot is mixed with lots from other farms its individuality is lost; if good, it may only be helping to sell the poor article of somebody else, and the producer does not reap the benefit of his pains in increased custom."

Small matters must be found out by experience, and in all experimental stages there is loss. Very cautious we would advise any one to be, while so much in *details* yet remains to be established; and in the face of continued and systematic misrepresentations in certain quarters, which we are at a sad loss either to account for or to understand, we feel compelled distinctly to decline responsibility for any other than our own personal opinions, which have been in brief published before, and are more fully here expressed. We have however lived to see our earlier calculations regarding the quantity of land required, and the gross profit over food, even with the present standard of laying, verified by actual experiments in widely different hands; and so we believe we shall yet see a large farm for poultry conducted on rational principles to a satisfactory conclusion. At all events, the fact stares us in the face that with the corn markets of the world open to him as to us, the small French occupier finds it to his interest to cultivate his *poultry* to the extent of "£3 to £5 per acre of his occupation," supplying the British market as well as his own. To this simple fact we return, and we need not fear for speedy improvement as regards the cultivation of this profitable branch of stock in England, if by the repetition we can only bring it home plainly and strongly to the British mind.

CHAPTER IX.

ON THE UTILITY OF "FANCY POINTS."

IN the preceding part of this work we have treated of poultry and their management in the general way, or with a special view to the production of eatable food; we now propose to devote a few chapters to the practical details of breeding fowls of the highest class in accordance with the recognised show standards. But it may be well first to say a few words as to the utility of having such standards at all. Many people doubt it; and when we admit, as we have done in our last chapter, that certain breeds have perceptibly deteriorated during the last few years owing to the effects of show competition, it may be thought that the question is at once decided in the negative. But this would be to take a very superficial view of the matter.

We may at once repeat our admission and our regret that many of the most successful birds, as regards competition at shows, have perceptibly fallen off in the useful qualities for which they are supposed to be distinguished. Some of the largest Dorkings exhibited have shown a coarseness of bone and a yellowness in the skin, neither of which would have been tolerated in bygone years. Similarly, Brahmas and Houdans have in many yards lost their former reputation as layers, though easy victors in competition; and other instances could be given if needed. But this is only half the truth, and before a judgment can be formed as to the effect of "the fancy" and "fancy standards" upon poultry generally, we must go back to consider what poultry was before that fancy came into existence.

And so doing we shall find that great and real good *has* been accomplished. To go back only thirty years—let us say to 1840—very few breeds of fowls were known, and very few were the people who kept them. Game, Spanish, Polish, Dorkings, and some of the Hamburghs formed the stock of our yards; and not one person in a hundred kept fowls. Small indeed were the average birds brought to market, and rare and precious were new-laid eggs in those days. Little was known about either the birds or their proper management, and hence the few who did keep them usually owned honestly that they scarcely paid their expenses. The comparative ignorance that prevailed at that time can scarcely be realised by modern amateurs, but may be illustrated by the discussions on "exhibition fever," roup, and other diseases, which for years after occupied the poultry papers of the period, though they are now thought very little of by any one. It might be said, with little exaggeration, that at that time hardly any one either understood fowls, cared for them, or kept them.

Five or six years later Cochins came upon the scene, and created both a "sensation" and a mania, which really for a time rivalled the tulip craze and other epidemics of modern times. We had never seen any fowls so big, or so tame, or of such bright colours. They were gentle and lovable, and everybody tried to get those immense birds which laid every day. But that was not all the secret of their popularity, which we believe lay in the fact, very rapidly discovered, that they would *thrive in a very small space*. A few square feet and plenty of green food granted, and these great birds were happy and contented. That, in our opinion, was the *new fact* which Cochins

brought home to the British mind; every man heard or learnt that in a little back-yard he could keep his fowls. It was a new thing, and it "took" amazingly; so Cochins went up in the market, and shows were started, and on several occasions £100 was paid for a pen of birds. Public curiosity was more and more aroused; but this could not last, and much of it died away. *But the popularity of poultry never did.* The ground gained in this respect was never lost again; and while there is no "mania" now, it is within our personal knowledge that a Cochin cockerel was sold at the close of 1871 for £30, and the number of people who in one way or another keep poultry is greater than ever.

Now it must be remembered that nearly all this is owing to the enthusiasm of fanciers. They breed those beautiful birds which attract the general public to shows, and inoculate numbers with the new desire to keep poultry too; and they maintain those breeds which are the foundation of all real progress and of satisfactory results. It has been proved over and over again that in the hands of farmers or *mere* market-breeders fowls almost invariably deteriorate. It is only people who have a genuine appreciation of some peculiar breed that care to keep it up; and if it is easy now to get fowls of over a dozen pounds weight, we owe it in reality to the "fanciers." Their fine enthusiasm alone could do a work which often demands a great expenditure both in time and money; and if once the breeds which are so valued lose the support of amateurs, they must rapidly lose their good qualities or even become extinguished. The real danger of this is shown by the fact that one or two good breeds *have* already been thus lost, because the "poultry mania" came too late to save them.

Why a Houdan should be ignominiously disqualified unless furnished with a muff and five toes on each foot, or why a few black specks upon a buff Cochin should be of such amazing importance, are not so self-evident; and the necessity for these or other (equally arbitrary) standards does not appear till after a little reflection. Supposing the necessity of shows and the stimulus of competition among exhibitors to be granted, it is often asked, Why are not fowls judged according to their laying, their hardiness, or their qualities, instead of the colour of a feather or the shape of a comb? This question has been lately put with unusual point and force by the Hon. J. Stanton Gould, in a long address delivered in February, 1872, before the New York State Poultry Society; and which, from the high reputation of the speaker as a stock-breeder, has deservedly aroused great attention among American poultry-breeders. We extract the pith of Mr. Gould's remarks on this head as follows:—

"In the rules for judging Brahmas I am told that the beak 'must be well curved.' I would respectfully ask why? If I have two Brahmas, A and B—A having a well-curved beak, and B having a beak which approaches more nearly to a straight line—is the curved beak any evidence that A will lay on more flesh for a given amount of food, or lay more eggs, or is in any other respect a better hen than B? I read further in the same standard of excellence that the Brahma must have a pea-comb . . . . but why, I ask in the name of common sense, is it necessary that a Brahma should have a pea-comb? . . . . If it is true that the pea-comb is no indication of the excellence of a fowl, or of its profitableness, or of its purity of blood; and if it does not minister to the æsthetic gratification of its owner, is it not simple nonsense to include it among the points of excellence of the breed?" After other instances to the same effect, Mr. Gould concludes this part of his subject by remarking, "I hope that you will candidly consider these objections; for I feel very sure that there can be no real advance in poultry-breeding until it is removed from the realms of caprice and fancy, and placed upon the sure foundations of anatomical and physiological science."

The speaker then further urges that the value of size in any breed is much exaggerated. "It is

not contended," he says, "by any one, that a hen which weighs a pound or two more than another will necessarily lay a greater number or a greater weight of eggs than a smaller one; all the superiority, therefore, in an extra pound of flesh, or perhaps of bone, is at the utmost measured by the price that this extra pound will sell for in the market. Suppose that it turns out, as the result of experiment, that this extra pound costs more to put on than the market price; surely then it cannot be considered that this extra weight is a merit, it must rather be looked upon as a demerit." Passing on then to what he considers *should* be the points to be encouraged, Mr. Gould advocates, in the first place, the seeking of "the greatest weight in the smallest relative compass;" and in the second, those breeds in which "the greatest bulk is concentrated round the most valuable parts."

It is impossible to put such questions more forcibly and fairly than they have been put by this able speaker, and we devote this short chapter to their answer, because they are constantly asked by persons who only have a partial acquaintance with the subject or with the fowls themselves, and the answer has a very important bearing upon the question of poultry cultivation considered as a whole. When, then, Mr. Gould complains that the arbitrary standards "tell us nothing about the physiological condition of the birds—nothing about their capacity for laying on flesh—nothing about their capacity for laying eggs—nothing about their powers of digestion and assimilation—nothing about their hardihood"—and asks why they are not judged according to *these* points; the first answer which occurs after a little thought is the very simple one, that it *cannot be done*. Such matters must of necessity depend chiefly upon *testimony*, and hence are inadmissible in a show. We *could not see* in an exhibition pen which was the best layer of two competing hens; but colour, or shape, or size we *can* see, and therefore by these we determine, since they are the only elements which can bring fanciers into visible competition. To go by evidence would never be tolerated, and would lead to many evils which do not need to be here specified. We need something which can be brought actually before our eyes; and even with regard to shape, the feathers in which a bird is clothed prevent such nice discrimination as is possible in the case of a Shorthorn bull. The actual outline of the body cannot be seen, and to decide by careful feeling would be simply impossible in the time given for judging large numbers of poultry pens. We might point out that even in agricultural stock the *mere* seeking of such "utility" points has degenerated into notorious over-fattening of the show beasts; but the *tu quoque* argument has little place here, and we come back therefore to the evident necessity, from the nature of the case, of certain *plainly visible* points by which judging may be determined. Whatever these are, they would be equally arbitrary, and we may as well have the present as any others, except where a fowl is evidently capable of improvement in beauty without losing the characters of the breed.

So with regard to size, Mr. Gould's objection is plausible, but will not stand the test of consideration. When a man buys a ram at a high price, because both flesh and fleece are better than the common breeds, the extra flesh and fleece of *this* ram will most certainly be worth only an infinitesimal fraction of the price paid; but the animal *stamps these features on a progeny*, and in this way his cost is well repaid. So in poultry, it may cost five shillings to put on a fowl an extra pound, which may only sell for ninepence in the market. But in the next generation the extra pound will cost far less to produce; and so in a little while *a race is established* which, without special care, reaches a pound heavier than formerly. When established, this standard of size is by the same means maintained, and is a permanent benefit; for even were it the case that an extra pound which sells for ninepence cost ninepence in food to produce it, there would still be a gain, from the fewer number of fowls to feed, and hence less cost of labour, to produce a given weight of meat. But this is not the case, for it is always found that large breeds cost less to

produce per pound than small, besides making their weight at so much earlier an age, and hence giving a quicker return for the capital invested in them. We might say indeed, that the bare fact of our possessing large breeds at all is an evidence of the value of this cultivation of size, being simply the result of that selection which arouses Mr. Gould's doubts as to its utility.

Lastly, Mr. Gould's own cardinal principles will not stand when practically applied. The breed which combines the greatest weight in smallest relative compass is unquestionably the Game; and that which has the greatest proportionate weight in the choicer parts is probably the Malay, which in relative weight of the breast, merry-thought, and wings together, exceeds any other fowl; but neither of these breeds in ordinary circumstances can be called profitable poultry. Mr. Gould in the same address admits the Brahma to be one of the most valuable breeds; yet by both these canons it would be excluded. There are in fact a dozen circumstances to be considered before the value of a breed is known. There are not only to be weighed its proportion of parts, but its laying, its hardiness, its domesticity, its precocity, and the comparative cost per pound to produce its carcase; and from these various causes almost every breed has some special value, for the sake of which it could ill be spared, and even when comparatively of little value in itself, is often highly useful as a cross.

The question has also another aspect. By thus keeping a high standard of artificial points, below which a bird is comparatively valueless, conventionally perfect specimens will always be few; and we ensure a large number of birds which in these particulars are below par, but which possess all the *economic* merits of the variety to which they belong, and which are available for purely commercial purposes at a very moderate price. That celebrated breeders are often glad to dispose of such extra stock at only a few shillings over the price of ordinary fowls is notorious; and as the hiring of a good ram at a high price is directly remunerative in the increased fleece and mutton produced, so the effect in the case of poultry is equally capable of being calculated. Supposing a farmer's breeding-stock of one ordinary cock and seven hens is worth £1, or 2s. 6d. each bird, the difference in value of a fair Dorking cock at £1 and seven Brahma hens at 10s. each (and we have often been glad to sell pullets possessing every desirable quality, but useless for show, at this price) will be £3 10s.; and if all their eggs were set and reared for market, this extra cost would be many times repaid in the extra weight, hardiness, and early maturity of the produce. And though these parent birds would be such as by the amateur are vulgarly called "screws," they are such as will never be reared by the mere farmer. The birds of fanciers attain a size which is never kept up long by the commercial breeder, simply because they get such food as the breeder or farmer will never give. The best milk, the best meal, eggs, meat, assiduous care —are all devoted to them; and the despised amateur thus maintains the stock, which furnishes the raw material for all real improvement in market poultry. Without his "points" to breed to, he would never do this. Granted that his standards are artificial, and some of them even ludicrous and opposed to every principle of æsthetic beauty, still they are dear to his heart—they are *his* ideal of beauty and grace. Every one has such. Dear, simple Hans Christian Andersen understood this well, and we cannot do better than quote one of his exquisite fables; but we will change his title, and call it for the nonce a treatise on

THE BEAUTIFUL.

"Gone! gone! The beautiful is gone! The roses have faded, and the leaves fall down. The birds which used to sing are dumb, and the pigs go out hunting for acorns, and they are now the lords of the forest!"

Thus sighed the rose-king. Do you know him? He is easily recognised. Go up to the wild rose-bushes, and when in autumn the flowers are all faded, and only the hips remain, you will often find under them a great red-green

moss flower. That is the rose-king. A little green leaf grows out of his head, which is his royal feather. He is the only one on the rose-bush; and he it was who sighed.

Under the trees, in the hollow, was a great puddle, and here all the pigs lay, big pigs and little ones. The place was to them so beautiful, and they were all so clever, and so fat! "Oui! oui!" they kept on saying; it was all the French they knew, but even that was something.

The old ones lay still and meditated; the little ones were very busy, and never quiet. One little porker in particular had a twist in his tail, just like a ring, and this ring was his mother's pride. She was always looking at it, and she thought all the rest were looking at it, and thinking only of that ring. But they were not; they were thinking only of themselves, and of what was *useful*, and of the *reality of things*.

They had always heard that the acorns grew under the trees, and so they grubbed up the ground. But there came this quite little pig—it is always the young people who start these new-fangled notions—and he affirmed that it was no such thing; they fell from the branches, for one had just fallen down on his head; the idea struck him at once, and he had made observations, the result of which was that he was quite certain on this point. The old ones put their heads together over it. "Humph!" they said, "Humph! we only want the acorns; whatever is *good to eat* is good, and we can eat anything." And all the rest cried, "Oui! oui!" and the little philosopher got no thanks. But the mother—she looked lovingly at her little porker, the one with the ring in his tail. "With all this one must not overlook the beautiful," she said.

And the rose-king still sat in the cold, damp weather, and sighed, "Gone, gone! all the beautiful is gone, and the pigs are the lords of the forest!" But the old mother sow thought that was not right. "There is always *somebody* who has a soul for the beautiful," she said; and she looked again—*so* lovingly!—at her little porker with the twist in his tail.

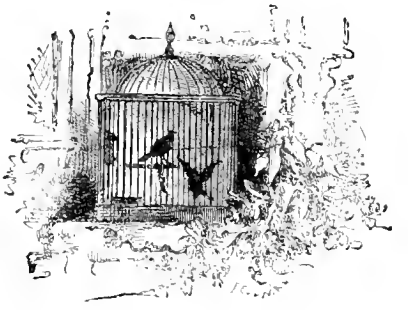
These "fancy points," then, are to our amateur what the "twist in his tail" was to the mother of the little porker. To lose them would be to break his heart; he admires them and loves them, and were it not for their sake he would never spend the time, and thought, and money he does in maintaining those breeds, which without him would be lost, and the loss of which would be irreparable.

We have thus shown how "the knowledge, enthusiasm, and patient perseverance of the fancier are necessary to improve and maintain any breed in perfection for even the utilitarian." But it may still be asked, If in the fancier's hands these breeds have *lost* some of even the original economic value they had, how then? The answer to this also is very simple, and consists in the fact that however much these qualities have diminished, they usually reappear in all their original perfection *in the first cross;* and as farmers or market-breeders usually employ such first crosses, which are better for nearly all purposes, every practical end is still secured. Thus, supposing a strain of Brahmas to have deteriorated in laying, and a strain of Houdans to have suffered in the same way, through long breeding to merely fancy standards, and omitting to select the best layers; the chickens produced by *crossing* these two families will in almost every case reproduce the faculty in all its original perfection. This is a fact we have seen often, and it further establishes the truth demonstrated by Mr. Darwin on other evidence,* that "the very act of crossing gives an impulse to reversion, as shown by the appearance of *long-lost* characters," and the destructive effect of which on his own well-known theory of development it is very strange that this eminent naturalist does not see.

As we have said in our last chapter, the improvement of any breed in laying or other *useful* qualities is, however, equally possible with the development of mere fancy characteristics; and though this matter is entirely in the hands of market-breeders themselves, we are far from denying that shows and fanciers might do more than they have done in even these respects. To give prizes to the best layers we have seen would be impossible; the matter could not be decided in the show-pen itself, and to determine it by evidence would be in many respects unsatisfactory. But

* "Variation of Animals and Plants under Domestication."

a class for the largest and finest cross-breeds for the table might yield good results; and in one particular breed—the Dorking—the disqualification of all birds which showed a yellow skin would be a very useful reformation. Prizes for dead poultry might also, in our opinion, be given a much more prominent place at all our shows than they now have, with marked effect upon the quality and size of the fowls sent to market. This is the really *weak point* in English shows; and as it is the exhibitions of fat poultry which have had so great a share in the improvement of French table-fowl, so we believe the recognition of this practically new element would produce in time an immense effect upon English market-stock likewise. Let people see at every poultry-show really first-rate and large fowls as dressed for the table, and they will soon begin to be more fastidious about those they buy for themselves. At present this stimulus does not exist, and the providing it may and should be pressed in every possible way upon show committees



CHAPTER X.

COMMENCING A STRAIN.

EVERY show "season" invariably produces a certain number of new fanciers, who come forward to take the place of the old, and to extend still further the knowledge and love of fowls. The success of these different individuals, however, varies very widely. Some few continue year after year to maintain and establish a prominent position; but we have often been amused to observe the numbers who, having purchased the most successful birds of the season, appear to carry all before them for a few months, and then retire again into oblivion—ultimately, in all probability, to give up the pursuit altogether in disgust. The number of those who in this manner commence "poultry-fancying," and then retire from it with more or less loss, is very great, and has given rise to a very common opinion that the cultivation of fancy varieties must inevitably be a losing concern; but we have no hesitation in saying that such an opinion is altogether groundless. In many cases, where all operations are carried on regardless of cost; where the houses and yards are of a substantial, showy, and expensive character, and the whole is regarded rather as an amusement for the opulent than with any reference to pecuniary results, it may be regarded as a fair return for even first-rate breeding if the receipts and payments be found to balance at the end of the year: with any other pursuit, carried on in a similar manner, this is the best result which can be expected. But if management and economy be studied, as well as the stock, fancy poultry will yield a very fair profit, and there are not a few real amateurs who actually do reap a very considerable pecuniary return from it, even apart from the few well-known breeders who derive their entire income from the cultivation of fancy fowls.

It is therefore worth while to consider the reason of so great a difference in the results of the same pursuit; for profit and loss do not depend upon accident or chance, but are necessary consequences of wise or unwise methods of procedure. And to put the matter as tersely and simply as possible, we are satisfied from long and careful observation that the losers and the gainers in the poultry-fancy might in almost every case be as correctly described by the terms of the *buyers* and the *breeders*; or yet again as those persons who are merely *exhibitors*, or such as are *fanciers* in the true sense of that term.

There is a large class of persons who buy and exhibit fowls merely from a feeling of pride in their possession; not that they love or care for them in reality, but from the same feeling which leads a wealthy man with no love whatever for art to buy and hang on his walls the most expensive pictures. There may be at first a slight passing interest in the birds, but that is all; and when the fowls which have been thus purchased regardless of expense die, or get out of condition from overshowing, the interest comes to an end along with the success, for their progeny is in all probability worthless. Disgust follows, and another so-called fancier "gives up" a pursuit which he never really entered into at all.

We shall however suppose that from some cause or other a real interest in and love for fowls has been awakened, and that the amateur desires to enter upon the cultivation of some one or two

of the many varieties which await his choice. We say one or two advisedly ; for to attempt at first to keep many is to fail almost of necessity. Each variety demands not only judgment and care but to some extent a trained eye. It will be found, in fact, that one variety spoils or biasses the eye in judging another of a very different character ; and though long experience and the constant sight of birds will to some extent correct this, as is the case with a few large breeders and judges, we have heard one of the best judges in England say that he could never judge a Game class to his satisfaction if compelled to take it immediately after judging Dorkings. By attempting more than one or two varieties, also, all the practical difficulties of breeding, hatching, rearing, and selecting, are increased tremendously, and what might be a pleasure becomes really a painful anxiety, burdensome alike to mind and body. Even of the great breeders, who to a fair extent have succeeded in all the varieties they keep, scarcely any have succeeded in keeping a *commanding* position as regards more than one or two, and this lesson should be well regarded by the mere amateur.

Well, our pupil having caught the "hen-fever" with more or less severity, his first and most natural idea, if in easy pecuniary circumstances, is to purchase the first-prize cock and pair of hens at some good show, and pen them up for breeding stock. We wish at once to say emphatically that *this is not the way to begin, and that it will very seldom answer.* Very rarely indeed will these birds be properly adapted for breeding together, and their progeny will therefore, in most cases, be mere trash from a fancier's point of view. It is just possible the birds themselves, if claimed at a leading show, may be really the pick of the year ; and, in that case, so long as the purchaser can keep them in good condition, he may win the remaining prizes, and realise the picture we have drawn of carrying all before him for a few months. But if he thinks this is any real credit to him he is much mistaken. Every breeder in the fancy *knows where he got his fowls from*, and that money alone has obtained him his dearly-purchased triumphs ; while the risks his precious birds run of dying or losing their fine condition through his ignorance how to treat them, or from overshowing, is very great. Supposing all this survived, and the fowls safely bred from, disappointment is almost sure to ensue, for the reason we have already stated, that they are very seldom such as should be mated ; and if the tyro should be so rash as to advertise and sell eggs from his treasures, very probably the autumn brings him sundry indignant letters, broadly hinting that the eggs he supplied must have been the produce of rubbish kept for the purpose of supplying his customers, so far are they from what they ought to be. It may happen even worse, that the specimens purchased are *not* of any special value, and that even the poor satisfaction of winning with them again is denied him : the competition may have been very poor (of which fact he is unable to judge), and hence he may have been deceived as to their value ; or a bad light may have misled the judge : in either case he is "done," and in the first bitterness of his disappointment very likely meditates retiring from the fancy altogether, a sadder and a wiser man. These are no mere fancy sketches ; they are only what we have actually seen again and again.

We by no means wish to affirm that the best birds are never to be purchased at high prices. Only very lately we ourselves offered twenty guineas for a cockerel as he ran in the yard, which up to that time had never won a first prize. But it is *not the beginner* who should do this. In our case the young bird belonged to a breed we had studied for years, and he accordingly justified our estimate even as an exhibition specimen, by winning every prize and cup of value through the whole season. It is, however, not very often that experienced breeders will give such prices, and when they do it is for one of two reasons ; either they have a *reputation to keep up*, and prefer to buy a bird which they see would otherwise beat their own ; or—and this is the reason in most cases —they know the pedigree well, and what it will breed with their own stock, and are willing to pay

any price in reason for the sake of a valuable progeny. But it requires knowledge and a trained eye thus to safely pronounce upon a fowl's real value, and for the tyro the risk is too great in every way, especially when we consider the danger of losing the costly purchases afterwards by improper treatment.

In some few cases we have known the reckless system of purchasing at any price to be kept up for years, and an apparent continuance of success thus procured. The merely personal pride which can find any gratification in this sort of thing is rather hard to understand, and would be diminished somewhat were it known that such success is always discounted at its true value by the initiated, and only imposes upon the ignorant or the outside public. We mention it thus because in several ways *such* "poultry-fancying" does harm. As we have already hinted, the usually inferior character of the progeny from even the best birds thus procured and mated haphazard brings the whole pursuit into contempt and disrepute amongst those who purchase eggs or chickens from such random stock, and are justly annoyed at the character of the produce. Another evil is caused in the opinion thus fostered that prizes are the sole or even the chief end of poultry-breeding; and still another—perhaps the most serious of any—is the idea which such individuals help to spread, that only persons of wealth, who can afford such great outlay, can engage in the pursuit with any prospect of success, and which prevents many to whom it would be a benefit in every way, and who both could and would succeed, from attempting it at all.

On the other hand, trying to obtain "cheap" birds will almost invariably cause loss and disappointment, for really good fowls being always in demand, and the supply never large, they can always command a fair price. For breeding purposes alone—apart from any idea of exhibiting the birds themselves, but looking only to the progeny—good, reliable, carefully-bred birds of what may be called the "major" breeds, can rarely be obtained under two to five guineas each; other breeds, such as Hamburghs, are not worth so much. A thorough judge can occasionally pick up a good bird for a small sum; but for the beginner to attempt any such "dead bargains" in fowls is perfectly hopeless, for the simple reason that he knows nothing about them. For birds to be "good breeding-stock" (in these and following chapters we speak of breeding with a view to *exhibiting* the produce) implies a great deal, but chiefly, that whatever qualities they have be not accidental, but the result of careful breeding for generations. This will appear if we consider that every desired quality is simply the result of repeated and continuous selection year after year of those birds for breeding-stock which exhibit that particular point in the greatest perfection. Without this mere appearance is worthless. For instance—to borrow an illustration written by us many years ago*—"the Grey Dorking is a breed which assumes within certain limits almost every variety of colour, and occasionally amongst others, that now known as Silver-Grey. By breeding from these birds, and selecting from the progeny only the Silver-Greys, that colour was established, as any other might be, as a permanent variety which breeds true to feather with very little variation. Now a pen of birds precisely similar in colour and appearance may, as at first, be produced from ordinary coloured Dorkings, and shown as Silver-Greys, and the most severe test may fail to discover any apparent difference between them and the purest-bred pen in the same show. But breeding would show the distinction instantly, for whilst one pen would breed true to itself, and produce silver-grey chickens, the *accidental* pen would chiefly produce ordinary Dorkings, with very few Silver-Greys amongst them; and though *in time*, by continuing to select these, a pure strain would be established, for immediate purposes the pen (as Silvers) would be worthless." It may seem strange that it should be possible for two birds to be similar in appearance, and for one to be of little value while the other is worth a large sum; but it is so, more

* "Practical Poultry Keeper," p. 76.

or less, in many cases, though perhaps seldom in so full a degree as we have mentioned. For taking two birds—say Buff Cochin cocks—let us suppose one has been reared by an amateur with a small yard, and who can only keep and rear very few; who, therefore, keeps only the best, and after years of care succeeds in getting his magnificent show specimens out of two dozen chickens. Let us suppose the other to have been bred by a man who has acres of ground, and to be the produce of very ordinary stock, but to be the "chance" best of three hundred chickens. The first bird, well-mated, will stamp his own character upon a large part of his progeny, and be therefore valuable, while the second bird may breed anything, because he has no *fixed* characters at all.

If we have succeeded in making ourselves understood, it will now be seen that a thoroughly good strain of fowls can only be the result of art, care, study, and even of *time*. It cannot be attained all at once, except by adopting some one else's ready-made; and requires a real and steady interest and some perseverance. Without these qualifications it is impossible ever to arrive at it; but assuming the intending fancier to possess them, we will now say how in our opinion he ought to proceed.

And first, if he have no friend on whose judgment he can rely, but be left entirely to his own resources, the great object for some little time must be, not to snatch any sudden success, but to *acquire knowledge*, and more particularly the special knowledge of the particular breed preferred. Such *study of the breed* is the first great essential to success, and should in all cases be commenced at once; every possible show being visited, and particular attention being given to the variety in question. This study must be thorough and systematic; for it is not only needful to know good birds when they are seen, but to know definitely *what makes them* superior to others. No breed can be thus "learnt" all at once, though some require much less study than others. The descriptions should be carefully read and mastered, and compared point by point with the best specimens to be seen in the show-pen. Most amateurs are very courteous in imparting any information in their power to the beginner, and introduction should be sought to any such as opportunity offers, and all possible knowledge gathered from them. Very much can be learnt in this way where there is any natural aptitude for the knowledge; and such intercourse thus begun not unfrequently lays the first foundation, as it has repeatedly in our own case, for lasting and valued friendships, which in their pleasant freemasonry and frank good-feeling have exemplified some of the best points of the poultry-fancy and its votaries.

Before actually meddling with very expensive stock, it is most desirable to have attained some practical knowledge of fowls and success in their management by real experience with ordinary birds. Where both kinds of knowledge have to be acquired together, we should advise in most cases the purchase in the first instance of a few *inferior* specimens (as regards colour or other matters) from good stock, of the variety to which the preference inclines, which can generally be obtained of good breeders at a small sum. Thus the amateur will gain both the needful experience in management and some practical knowledge of the breed itself at the same time; while such stock after a little may be made highly useful, by comparing first-class specimens with them, and training the eye to see *where* the great difference in show value between the two consists. Until some amount of this knowledge be in one way or another acquired, large sums should not be spent upon fowls, if it be desired to avoid serious mistakes and consequent loss. Such a course demands patience, which many perhaps may not feel inclined to bestow; we can only say that very little time need be lost by it, while much useless expenditure may be saved.

Supposing the taste to have been imbibed, as may probably be the case, at one of the great winter shows, and a few birds to have been thus purchased at a moderate price, we should expect that by March or April some real and *discriminating* knowledge of the breed had been attained. We

would then advise that a few sittings of first-class eggs be procured from sources which can be depended upon, and if possible from more than one. The owner's own inferior stock should also to some extent be bred from ; and in this way another kind of most valuable and necessary information will be obtained—that of the *appearance of first-class chickens at different ages*, and as compared with inferior ones of the same breed. It must not be assumed that all the chickens from the purchased eggs *are* first-class, for this will not be the case. If birds could be thus bred their value would cease. The choice specimens are always comparatively few, and if even one-fourth of any brood are more or less fit for competition it will be very good indeed. Neither will *all hatch* except in very rare cases. Highly-bred stock are not quite so fertile as a rule, and there is some risk in the railway journey. Many chances may even spoil the whole hatch ; and if chickens are found dead in the shell the vendor must not be blamed ; since they were *there*, it is not his fault that they did not come to maturity. To speak in this way will seem absurd to many ; but we have had a letter couched in the most insolent terms from a man because "only" six eggs had hatched out of ten sent to him, and demanding back the price of four. We can only say that even in ordinary seasons 60 per cent. of chickens from travelled eggs is a very fair average. The eggs of all large fowls are more uncertain than those of small. In the case of early eggs—say laid in January and February—even 40 per cent. must be called satisfactory, the eggs being naturally not so fertile as later on ; but as chickens at this season are proportionately more valuable, on an average purchasers get about the same return for their expenditure. Many more, occasionally even all, may be hatched later in the spring ; but the averages we have stated are pretty fair, and if the chickens be good are well worth paying a high price for.

Out of several sittings, therefore, there ought to be at least a few really good birds ; and as it will be seen very early that the various little chickens differ greatly in their appearance, careful note should be taken of them, and observation made as to which of them turn out the best at six months old, when they will have assumed their adult plumage. To the fancier with limited space, no knowledge is more necessary than this, as it enables him to hatch about three times as many chickens as he can rear, and clear them off at an early period, so as to leave the ground at liberty for the best alone.

In this way, and by thus judiciously employing one season only, any one who has a genuine interest in the subject ought by the approach of the next winter's shows, to have acquired a very useful and sound knowledge of the variety he has adopted. He will have learnt practically its qualities and management, its points, its commonest *defects* from an exhibition point of view (this last is highly important), and also how these manifest themselves as the chickens grow. He can now with some correctness, therefore, estimate for himself the real value of a bird, and is accordingly ready to buy. He may very probably even have a first-class chicken or two of his own, which he thinks may compete fairly with many others which he sees. In that case we should strongly advise the expenditure of an entrance-fee, not so much for the chance there may be of winning, as for the opportunity of comparison thus afforded between his own *best* chickens and those from other yards, which will add still more to the knowledge already possessed.

The purchase of stock will now be proper, and if pecuniary resources correspond with inclination, really first-class specimens may be secured with some probability of the expenditure not being thrown away. But very good breeding-stock may often be secured at a very moderate cost, by the consideration of what points are indispensable in both sexes, and what faults, though fatal in a show-pen, are capable of being *compensated* by mating them with defects of an opposite character. We shall endeavour to enter into this in detail when treating of the different breeds, and will now only give one illustration. Supposing the breed be Buff Cochins, the necessary purity

of colour *must* be secured in the birds purchased as the foundation of a strain; but hens may be purchased nearly bare of leg-feather if required, and the deficiency counteracted by mating with a vulture-hocked cock. (This and other technical terms will be explained later on.) Where there are several good chickens at command the stock should be purchased to suit them, viz., mature hens to mate with a cockerel, and a two-year old cock for the pullets already in hand.

Having delayed buying till he can buy with judgment, it will be desirable now to provide if possible at least two unrelated pens,* and even more if accommodation can be provided for them By so doing the beginner provides for future crosses, and can keep his strain *in his own hands* without any further cross for some years, when it should be well established and its qualities defined; and year by year, if he proceeds with judgment, he will come nearer to his wishes. Otherwise, if the plan recommended by some of buying a cockerel every year for "fresh blood" be followed, the breeder never knows what he is doing; and may spoil all after years of labour by an unlucky cross, which brings with it some lurking fault not visible in the bought bird, and therefore never suspected, but which contaminates the whole yard for that year. The danger of this is all the greater from such constant crossing preventing the home strain from acquiring any strong individual character of its own which can withstand the foreign influence; whereas if it be carefully bred for some years, the strains of which it was first composed will amalgamate, and it will develop more or less defined features of its own, by which "Mr. X's strain" will by degrees become known to other breeders. It is in fact the ideal or standard of the *breeder* which becomes stamped upon it; and as the eye becomes trained to perceive the finer shades of difference, these individual distinctions between various yards are easily recognised; just as in the different herds of Short-horns, all of which arise simply from the different ideal standards of perfection as conceived by different breeders.

The principle on which a strain is brought to perfection after commencing is very simple, and consists only in the careful selection of breeding-stock year after year, with a view either to banish defects or to develop beauties. This we must enter into more fully in the succeeding chapter; we will only add here that too much must not be expected at once. The breeding must of necessity be somewhat uncertain the first year, owing to the different materials of which the yard is composed and the want of experience in mating them; but each season will mend matters, and there is a pleasure not easily conceived of in seeing year after year the chief faults disappear in your birds, while their beauties become more and more developed, and the proportion of show chickens steadily increases, till you perhaps carry off the "blue riband" of the season with the produce of the very birds which most disappointed you at first. *It is your work*—the result, not of mere money, but of your patience and skill—and it is work of this kind we wish to encourage and see more of. Merely to win a prize with a bought bird is nothing; but to create a new strain better than all your predecessors is to be of some real benefit, and to be a real "poultry-fancier." We have known a poor man sell his *best* chickens to richer people at ten pounds apiece, and beat the purchasers next year with the produce of what was left; for in this field there is no favour, and mere money cannot contend against knowledge and skill, which will always come to the front in the end.

The delay and preliminary study we have been so anxious to inculcate may be dispensed with if the amateur can engage the services of a really first-rate practical poultry-man or manager.

* When we say the pens should be "unrelated," it is chiefly the absence of *individual* relationship which is meant. In many cases, for reasons more fully explained in the next chapter, much trouble and uncertainty in breeding may be avoided by selecting all from the same *yard*. It is chiefly a question of time; birds from the same strain usually producing the best *immediate* fruit, while a skilled breeder would probably sacrifice somewhat of this, and in time produce better results from selections which give him at starting a good supply of unrelated blood.

These are never very numerous, and by no means easy to obtain. The employer in such a case should, in the first place, be *thoroughly* satisfied that his man has the knowledge he professes, and is of good character; and then he should be left to his own judgment until the employer himself has learnt enough to take some real share in the proceedings of each year. Such a man will rarely seek very expensive birds, he will prefer to "breed them" himself; and if he does wish to claim a twenty-guinea cup bird he may generally be trusted, as he may probably win back the amount in prizes. But even in this case, the proprietor should endeavour as soon as possible really to master the business for himself. There is twice the interest in a thing you understand, and every one naturally likes to have a voice in his own concerns. Moreover, few men excel in *all* departments; and we have known a case where both employer and man were skilled breeders—more than usually so, in fact—but where the employer left it entirely to his man to mate up the birds for breeding cockerels, while, by common consent, the master superintended the arrangements for producing pullets. Each knew and respected the other's superior judgment in that particular point. Something in these things depends on natural "gift," but, as a general rule, by seeking knowledge and experience *first*, success will assuredly follow, as in other things, and even the beginner may in a reasonable time obtain that silver cup or coveted "First Prize" which is the legitimate ambition of every amateur.

CHAPTER XI.

MATING STOCK FOR BREEDING PRIZE BIRDS.

HAVING in our last treated more of the principles on which the amateur commencing a strain ought to proceed, we pass on now to explain more in detail the practical operations of a fancier's yard. Many such have already been entered into in the earlier chapters of this work, being common to all poultry-keepers and breeders; we now, therefore, have only to consider those cares which belong specially to the "fancier" as such, and to the production of chickens fit for exhibition; the possession of a competent knowledge of the varieties themselves, stipulated for and acquired as in our last chapter, being now taken for granted.

Considered either in order of time or of practical importance, the first care of the skilful breeder is the judicious *mating* of his birds for next season. It will be found by experience that in the case of fully mature pullets or of hens which have got well over the moult in good time, laying generally commences within three weeks to a month of pairing with the cock; and therefore in all cases where early chickens are desired, the breeding-yards should be made up as soon after the end of November as possible. Weeks or even months before that, more or less thought will have been given to this important matter, and the experienced amateur will have begun to consider in his own mind "what he shall do." His chickens will have been carefully scanned as they grow up, and he will have determined betimes whether he has all he requires among his own stock, or whether he is deficient in any department and must buy to supply the want. He will have half made up his mind that he will put certain birds together, and selected those he will not part with, unless perhaps tempted by the twenty guineas which—except in very rare cases—is now the orthodox "top price" of the poultry fancy; but all these resolutions will be liable to revision at the Birmingham, London, or other great winter show, which in his case represents the result or record of the year. Nothing is certain till then. He may have been somewhat disappointed with his own stock—no one can be best *always*, and some one *must* come to the front—so he visits the show intending to buy a better cockerel than the best he can pick from his own; when he possibly finds that the falling back that season is general, and that his own despised best bird is as good or better than that of any one else. From some mysterious cause, a season not seldom does show such a general deterioration in some particular breed. Or the contrary may be the case, and he finds the bird on which his hopes rested so hopelessly and clearly beaten, that if he be pretty well off pecuniarily he determines to acquire the victor at any price; or his best birds, which he had trusted to breed from, may be claimed; and in many other ways all his plans are held in abeyance until he has seen for himself the chickens from his brother fanciers' yards. All these he strives to appreciate fairly, even for his own sake; for the man who can only see the "twist in the tail" of his own little porker, and who is alike blind to the real merits of other people's fowls and the faults of his own, will never really succeed in the poultry fancy.

Now comes the all-important business, and no study and pains are too great to devote to it; for the successful production of high-class birds may be said to depend exclusively on two things:

first, proper mating of the parents; and, secondly, the rearing to proper size and condition of the chickens; of which we are now considering the first. Hours and hours are spent over this matter by the most successful breeders. Each hen is to be carefully looked over, point by point, both her merits and her defects being carefully taken into consideration, until sufficient for one pen presenting the same general characteristics can be grouped together, after which the cock has to be chosen to accompany them. Whatever faults the hens may have must in him be carefully compensated, or at least absent, or they will be sure to be aggravated by the double influence. When put together, the scrutiny is repeated again and again, and *what will probably be produced* by each bird thus mated must be most carefully considered; for everything must have a definite object in this business, and if any one thinks such study ridiculous he had better not attempt to breed prize poultry. Often, after many an inspection has taken place and only confirmed the first impression, some hitherto overlooked feature will suddenly strike the eye, and at once necessitate mating with quite another bird to that originally intended. In the case of adult birds, what they have already bred with the same or other mates must also be taken into consideration. A hen may have been matched up the previous year apparently with judgment, yet the produce may have been most grievously disappointing, for such mishaps may occur occasionally to any amateur. In such cases, by studying the character of the unforeseen result, and tracing the probable causes, success for next season with the same bird, but differently paired, may be almost ensured, and the loss thus more than repaid. Some of these unexpected disappointments are very curious, and for a long time were thought unaccountable. They usually occur at the commencement of a strain, or when a cock is purchased for fresh blood to recruit an old one. For instance, supposing a really first-class Spanish cock to be mated with some of the very best hens which can be procured; if the two strains thus bred together are widely distinct, or have no blood already common to both, it may very possibly happen that nearly all the chickens are more or less red in the face, though both parents are unexceptionable. Again, we knew a good strain of Dark Brahmas some years ago, which usually bred beautiful pullets; but when crossed into others, and into one other in particular, almost always produced chickens so splashed with great patches of pure white as to be totally worthless from a fancy point of view. In the same way, two alien strains of Buff Cochins will occasionally breed pullets with a great deal of black in the hackle—far more than is always found in a portion of Buff chickens—though both parents are perfectly pure in colour; and we could add other illustrations which have come within our knowledge, testifying to the same fact.

These anomalous variations for a long time puzzled breeders, and were indeed mysterious, being apparently opposed to their fundamental axiom that "like produces like;" but the fact hinted at in our last chapter, as established by Mr. Darwin, has cleared up the mystery, and brought such apparently chance occurrences within the domain of law. Mr. Darwin has in fact shown them to be the effect of the tendency to reversion which is so well-known to every amateur, but shown in a manner not before understood, and exemplifying in rather a striking manner the services rendered from time to time to merely practical purposes by the purely scientific investigator. "It has long been notorious," says this eminent naturalist, "that hybrids and mongrels often revert to one or both of their parent forms, after an interval of from two to seven or eight, or, according to some authorities, even a greater number of generations. But that the act of crossing in *itself* gives an impulse towards reversion, as shown by the appearance of *long-lost* characters, has never I believe been hitherto proved. The proof lies in certain peculiarities which do not characterise the immediate parents, and therefore cannot have been derived from *them*, frequently appearing in the offspring of two breeds when crossed, which never appear, or appear with extreme rarity, in these breeds so long as they are precluded from crossing." This fact Mr. Darwin then illustrates by many examples.

Having shown that the common slaty-blue dovecot pigeon is almost certainly the ancestor of all the varieties, he shows that many breeds when crossed are continually producing pigeons coloured more or less like it, and often identical in colour, though the breeds themselves have been kept pure beyond the memory of man. Similarly, many breeds of fowl when crossed continually produce the reddish-brown plumage of the *Gallus Bankiva*, which is by most naturalists now regarded as the ancient progenitor of our domestic breeds. Again, the White Aylesbury drake and a Black Labrador duck produced a bird coloured like the mallard. Similar instances are quoted in regard to cattle; and in regard to the horse, reason having been given for the opinion that the original of all the equine races was some one animal striped like the zebra, it is shown that the produce of the horse and ass when crossed, and so extensively bred in Spain and America, have a strong tendency to develop stripes, especially on the legs. "It would appear," adds Mr. Darwin, "that with crossed animals a similar tendency to the recovery of lost characters holds good even with instincts, since so many cases have been recorded of the crossed offspring from two races, neither of which are incubators, becoming first-rate sitters, that the reappearance of this instinct must be attributed to reversion from crossing."*

The extent to which hereditary peculiarities may lie dormant in a strain, and be therefore capable of revival under this or any other stimulus, is one of the most surprising facts in physiological science, and still more occult manifestations of it have been specially remarked upon by Mr. Darwin, under the name of "*latent* characters." That eminent naturalist mentions as one of the most remarkable instances of this the Sebright Bantam. In this breed the sickles of the male bird have long been lost, and that peculiarity has now become so strongly established that even repeated crosses with the Black Bantam have little impaired it. Yet on the rare occasions in which a Sebright hen becomes barren, and, as then usually happens, begins to crow and assume other peculiarities of the male bird, she generally acquires *full sickle feathers*, showing that however long and entirely lost, *some* tendency to that characteristic male feature yet remains latent in the breed.

We have endeavoured to explain this principle fully, because its immediate bearing upon the operations of the breeding-yard is most important. This we shall readily see by a few illustrations. There is, for instance, a well-known strain of Buff Cochins, of marked excellence in every point, but which has a strong tendency to breed a white feather in the cock's tail. Now it is perfectly possible by a judicious cross from some other strain, and careful selection afterwards, to get rid of this objectionable feature; and we will suppose an individual yard in which this has been so far accomplished that in only a small proportion does the hated white feather appear. This desired result, with a little care, will now be easily maintained while such a yard is bred to itself, or with any other not too far removed from it in blood; but if crossed from a strain *thoroughly* distinct and alien, or what poultry-men call too "sudden" a cross (for without knowing the reason, they have found the evil of such often, and know it well), the *old white feather* may very probably reappear in all its original strength, though the new blood contained no tendency to it whatever. It is simply *the cross* of strange blood which gives the impulse to reversion. In the same way, to take the case mentioned just now, the pure white Spanish face being simply the result of assiduous breeding, and the most extreme care being needed for its preservation, the simple fact of crossing two entirely distinct strains gives the impulse to revert to the red face which belonged to the Minorca—in all probability the original breed from which it was derived. We need not illustrate this point further, as the same principle will readily explain many other anomalies which have long puzzled amateurs.

* In our last chapter we gave another illustration of the same fact in the recovery of economic characteristics, but not carried so far back.

The practical conclusions to be drawn from the tendency we have been discussing are no less important, and no less obvious. One of the first will be to modify very considerably what is said in various works on poultry, as to the absolute necessity for continually introducing "fresh blood" into a strain. When a yard has once been brought to high excellence, the introduction of such a cross is a very serious thing; and such wholesale instructions are never penned by persons who have actually *bred* prize fowls. It may be and is occasionally necessary to recruit a strain; but by providing at the outset several unrelated pens, noting down the produce of every hatch, and matching up every season with proper judgment birds not too closely related, such foreign importations may be made very rare. Some breeds, such as Dorkings, require more than others, but in all the necessity has been much exaggerated for this "fresh blood," and we would not shrink on any *single* occasion from pairing a hen with her chicken or *vice versâ*, but taking care not to repeat such an experiment next year. To mate brothers and sisters does not do so well, and must only be ventured upon in case of absolute necessity; but with fine birds we would prefer even this to using an inferior or unknown cockerel for that particular pen. More distant relationships matter little unless the interbreeding be carried on for a long period; and this can be avoided in many ways. Breeding three or four pens each year, and keeping a stock-book with the descent noted down, will enable a yard to dispense with any foreign aid for years; or a fine young cock may be put out in safe keeping, and brought back after a year or two, when the relationship will be too remote to be an evil.

When fresh blood really is needed—and it occasionally is—the best plan is, if possible, to purchase a cockerel from some one to whom you have sold stock of your own previously, and whose strain and yours are therefore to some extent approximated. By so doing may be secured one-half or one-fourth of the home blood; and even one-eighth will very greatly diminish the chance of such undesired "reversionary" prospects as we are now considering. If only blood totally foreign can be obtained, *no pains are too great* to ascertain what the intended purchase is likely to breed, especially if a cock. The pedigree should be traced back as far as possible, and all information as to any *past peculiarities* of the strain diligently hunted up, for it is on these the result will greatly depend. We speak feelingly on this matter, having known what it is to lose the produce of our best hens—the chickens turned out so badly—through depending upon one of the most promising cockerels we ever saw. In these cases there is no blame to be attached to any one, though the seller of the bird often is blamed in no measured terms when such results occur; it is pure and simple misfortune, but misfortune which the care we are now insisting upon may nearly if not quite prevent. As a rule, in purchasing such entirely strange blood, we would prefer hens to cocks, not only because they have less influence upon the fancy points generally, but because in case of a bad result less of the yard will become tainted by the experiment. Be this as it may, in making such purchases we would strongly urge that they be made if possible on the spot, *in the vendor's yard*. There the purchaser should ask, if possible, to have the progenitors pointed out to him; and if these were not bred by the owner, he should inquire the strains whence they were obtained, and, if practicable, pay a visit also to the yards thus indicated. If the contemplated purchases, on the contrary, be adult birds, he should ask to see some of the progeny, and inquire how they were mated in order to produce them; and in all of these cases let the investigator note carefully both the excellencies and defects that appear in either generation, and endeavour to form an opinion as to which birds either have been owing. All this may appear a great deal of trouble, but it is the knowledge of and the looking after such particulars which are the real distinction between the successful breeder, who knows in all his operations what he is about, and can utter something like a prediction of what the result will be, and the ignorant man who simply buys

"prize birds" at a high price, and takes his very poor chance of what may be produced. The object is not only to get birds which apparently possess the desired qualities, but to learn what we may call their *course of breeding*, and what particular tendencies they are most apt to develop; for every strain has its own, and these require to be studied and allowed for. When birds have to be purchased at shows, the breeding should in a similar way be ascertained as far back as possible; and no real amateur will ever refuse to give any such information which lies in his power.

The same truth will be a guide in another case, which continually occurs in selecting stock. To perceive that two birds possessing the same defect must never be mated, for fear of aggravating the fault, and to reject bad birds in favour of good ones—all this is simple enough; but when the necessity comes, as it often will, of choosing between different faults, one of which *must* be tolerated in next year's stock bird, the difficulty of the novice in breeding begins, and he too often judges wrongly. But what we have learnt furnishes us with the safe rule, of always preferring a fault which appears accidental or unusual in the strain, if not too glaring (in which case any bird should be of course condemned) to even a *lesser* defect which seems as if it were hereditary or common to it; and here again comes the advantage of having either bred your own birds, or acquired almost as much knowledge of their history as if you had. For instance—we will again take Buff Cochins for illustration—suppose it is found necessary to breed from one or the other of two birds, eligible in almost every respect, but one of which has a slight suspicion of white in the tail, while the other is free from that fault, but is greatly deficient in leg-feathering. A beginner would almost infallibly reason in this way: that the fault in the first bird being but slight, so slight in fact that he might be perfectly fit for exhibition, it was far better to choose him than one with so serious a fault as want of feather. But the experienced breeder would pause, at least, before he came to any such conclusion. It may be, from his personal knowledge if he bred the birds, or from diligent investigation if he did not, he finds the strain has a distinct *tendency* to the white tail, which has only as yet been partially overcome, and needs yet more care to banish it altogether; whilst on the other hand profuse feathering is almost universal, and in particular had remarkably distinguished both parents of the bird which is wanting in this respect. He would see then that there was *no tendency* to failure in that particular, and he would rather therefore put up with such a deficiency, which probably would appear in very few of the progeny, in order to do a year's work towards banishing the fault to which there was the hereditary predisposition.

Passing now to more plainly practical considerations, we would lay emphatic stress on the importance of preserving the utmost purity of breed by preventing *all* untoward alliances. Among many breeders, especially American, it is the custom to let all the chickens run about indiscriminately until a few weeks before they are wanted for breeding, and it is assumed that a week or two's separation will destroy all evil effect, and ensure purity of produce. This is not the case. The effect of a *first* union especially is often traceable in some degree through the *whole life* of that hen, particularly if the cock with whom the *mésalliance* was contracted presented any strongly conspicuous character; and even subsequent casual unions are often productive of more or less permanent ill effects. This has often been doubted, but we have met with so many instances of it that any question of its reality long since became impossible, and we would never on any account allow a male bird of any strange breed to enter even for a day in winter a yard of hens which we greatly valued. Many breeders are far too lax in this respect, and hence eggs from their yards on rare occasions present "phenomena" which would surprise no one more than themselves.

Very nearly related to this subject is that of the duration of the cock's influence over hens with which he has been mated; and, indeed, it is difficult to give any illustrative facts which do not trench upon both. No question is of more practical importance to the breeder; but it is only

lately that any systematic experiment has been devoted to it, or that much has been really known about the matter. The greater part of these experiments have been made in America, but some of great value have also been recorded in England; and perhaps the most practically useful way of treating this important subject will be to state some of the facts which have been established by testimony of the most indisputable kind, and carefully excluding any which are in the slightest degree open to suspicion.

Mr. I. K. Felch is one of the most extensive poultry-breeders in America, and states in the New York *Poultry Bulletin* that as the result of long experience he has acquired and acted on the conviction, that if the first three eggs laid after removal from the cock occur within four days, they will be his progeny, and that the fourth egg will belong to the new one. As proof, he states that he allows all his young stock before sale to breed together indiscriminately, relying on the few days seclusion on rail or steamer to counteract all evil; and he adduces testimony from many purchasers to prove that this is so, and that on arrival his birds always breed pure. Mr. Huntingdon, a noted American game-breeder, confirms this view from an experience of twenty years. Mr. Felch again reports a special experiment, in which he secluded from the cock two Brahma hens. The change of locality, as it often does, stopped their laying after the first egg, and they did not lay again till the fifth day. He set the eggs then laid, but only one of the third eggs, laid on the sixth day, showed signs of hatching, the rest being clear. And still later, in December, 1871, another fancier reports putting a Houdan cock with two Brahma hens, and after letting him remain a few days separating him and setting the eggs, which were carefully dated. The third egg after the separation of one hen, and the fourth of the other, hatched, the rest being clear. Further, after a few days' separation, a Brahma cock was put with the hens, and all the chickens appeared perfectly pure, none showing any trace of Houdan blood. In another authentic experiment, a common dark hen with chickens, after commencing to lay, was allowed to be once in company with a Brahma cock, after which eight of her eggs were set; but the result was only one chick resembling the Brahma.

Such facts, and others to the same effect which we omit for want of space, tend to prove that the influence of a cock only extends for a short time after the union. But it has long been the opinion of English fanciers that it often extends further, and there is now to be considered another class of facts which tends to prove this view of the case. Mr. W. Simpson, Treasurer of the New York State Poultry Society, allowed a hen which began to lay while with her chickens to remain several hours with a cock, and then set the eggs, of which three contained chickens. Mr. E. Howlett secluded a fine Buff hen, which laid sixteen eggs after separation, and of which fourteen produced chickens. Another gentleman separated both Cochin and Dorking hens, and the eggs for six days were fertile. And still another set the eggs till the tenth day after his death from a hen which had run with a Brahma cock, all proving fertile; but when she commenced again after two days' cessation, all were barren.

These experiments were simply directed to determine the question of fertility; but others bear both upon this point and that of preserving purity of race. A Mr. Payne, in England, had two Spanish pullets running with both a Spanish and Cochin cock. After they began to lay the Cochin was removed, and *six weeks* after the eggs were saved and set; but the chickens were feather-legged, in all other points resembling the Spanish. On another occasion the same gentleman allowed a Black-red Game hen, which laid while with chickens, to run a few hours with a Brown-red cock; and nine eggs produced chickens, which all resembled the father, or Brown-red. Another English gentleman, when residing in Canada, sold his Brahma cock and one hen, allowing the hen left to run afterwards with a Spangled Hamburgh which had five hens of his own. Every egg laid for ten days produced a pure Brahma chick, that laid on the eleventh day was a half-bred. In America a Mr. Woodward bought in March some Spanish pullets which had been running all

the winter with a native cock, and though no eggs were set till two months after purchase, all the chicks even then showed the native points in a high degree. Another gentleman breeding Game, finding a neighbour's feather-legged Bantam cock come over his fence, penned his fowls in securely, and saved no eggs for a month after, but several chicks still had feathered legs, though with no other sign of the cross. And the Editor of the New York *Poultry Bulletin* himself relates how on one occasion a Light Brahma cock found his way for one day only to some "Danvers White" hens. The "Danvers White," we ought to say, is a breed formed years ago by crossing Buff Cochins with White Dorkings, and has a white body, with bright yellow bare legs. Some of the chickens had the cross very distinctly marked, some showed very little of it, and others none at all, except very evident traces of feather on the legs.

From these examples, the truth of which can be implicitly depended on, and many others to the same effect which we omit for want of space, the difficulty of drawing any definite conclusion can be easily seen. Nevertheless, however contradictory many of the results of the experiments cited appear, certain general principles, after a little reflection, may very easily be gathered, and such as shall be sufficient for the practical guidance of the poultry-keeper.

It is well known, from almost universal experience, that one visit to a turkey-cock fertilises the whole batch of eggs afterwards laid by the hen turkey; and in connection with this fact it is very remarkable that after beginning to lay she, as a rule, carefully *avoids* the male bird. The common hen, on the contrary, never does this; and the difference at once suggests that there is probably a no less wide difference in the general reproductive economy of the two cases, and that the common hen would not remain constantly in the company of the cock during the period of laying if such were needless to the fertility of her progeny. This great and typical difference suggests further that there may be lesser but still great differences between different breeds, and even between individuals, in these respects; and that there is, in fact, *no invariable rule*, but that great variations may take place on either side of a general or mean average experience. Such a theory, in fact, offers the only possible means of reconciling facts so apparently conflicting as those we have cited; and when we consider thoughtfully that the whole reproductive system has become so modified in various breeds, that some have even entirely lost the naturally *essential* incubating instinct, whilst in others it is developed to an extraordinary degree; and that, further, the natural production of eggs has been increased by domestication at least tenfold, the existence of other differences will cease to excite any astonishment, and might, indeed, be rather expected than otherwise. So much being granted, therefore, the general run of facts is pretty easily gathered. It appears that in every case the influence of a cock (unless over-mated) extends for at least four days after separation, and perhaps this may be taken as the ordinary rule; but that in many instances it extends to nine or ten days, and that in some, at least, it may last for fifteen or sixteen. In our own yard we have found that the eggs of Brahma hens which have had chickens and begun to lay are almost always fertile in from three to five days after reunion with the cock, which agrees very well with the preceding. Differences, no doubt, depend greatly on the breed, the vigour of the stock-bird, the number of hens with him, and the period as regards the beginning or end of her "batch of eggs" at which either the union or the separation takes place. Thus, a hen put alone with a vigorous cock and allowed to remain several hours, might be expected to lay many more fertile eggs than could result from a casual union, which several recorded experiments prove to produce *usually* one fertile egg only—a conclusion further confirmed by the notorious fact that when a cock is over-mated the eggs always hatch in a very unsatisfactory manner.

But, besides mere fertility, there are other considerations; and, in the first place, it appears indisputable that eggs may be so far fertilised as to commence hatching, and yet not have

sufficient vigour to complete the process successfully. The number of cases where such experiments have been made as we have quoted, in which part of the eggs produced showed signs of hatching, but *did not hatch*, is proportionately very great, and the conclusion will not be lost on the intelligent breeder. But still further, and coming back to the considerations with which we commenced this part of the subject, it is utterly impossible to resist the conclusion that, beyond fertilisation, the act of union exerts, in many cases, a more mysterious and far-reaching influence. Mr. Darwin enters at some length into this subject, and attempts to explain it by his theory of Pangenesis, in a way which seems to us eminently unsatisfactory; but the fact remains—proved beyond the possibility of doubt—that again and again hens of different breeds and female animals of various kinds, after the birth of half-bred offspring, have ever afterwards manifested a plainly evident tendency to produce offspring bearing more or less strong traces of the same character. This tendency greatly varies, and cannot therefore be calculated; but it exists, and tends to show that a given chick may in a certain mythical sense have two fathers, or rather that the progeny of one bird is in some mysterious way modified by the previous union with another. The most probable explanation is, that as habit is the developed tendency to do again what has been already done, so the female reproductive system having once given birth to offspring having a strongly-marked character, becomes in a degree *moulded* to that character, and tends again to produce it. At all events the teaching of this fact is plain, and we would never, on any account, allow any valued hens to mate with another breed. We have known ourselves several cases in which hens once crossed have reproduced strong cases of that cross *two years* afterwards, and many otherwise unaccountable occurrences which have given rise to bitter recriminations, may be thus very easily explained.

There is yet another precaution of this kind to be taken, which may indeed be possibly connected with the foregoing. We have seen the statement of it by others ignorantly ridiculed by men who have had little experience of their own; but the experience of every year impresses on us the desirability of avoiding anything which may act strongly on the *imagination or sight* of the hen. A few facts will make this clear. A great American breeder had some Light Brahma hens running with Spanish, the cocks being Spanish only; and as long as these white hens were allowed, the Spanish chickens came with many white feathers, which ceased when the Brahmas were removed. Another gentleman put a single-combed hen into a pen of Crèvecœurs: the next clutch of chicks varied much in colour, several had single combs, and most were worthless; but after the strange hen was removed they were all right. A well-known English breeder very frequently, but not invariably, found that whenever he put black hens with his white Cochins, he got many chicks with black splashes, which ceased when they were removed. For this last case we can personally vouch; and in our own yard, breeding as we have frequently done from a hocked cock to compensate want of feather, we have always found that *cutting off* the vulture-hock diminished the number of hocked chickens at least 30 per cent. This influence, no doubt, greatly varies—in some cases no sign of it can be discovered, whilst in others it is very evident—but it should always be kept in view and guarded against. Mr. Martin's preference, as expressed in the chapter on Dorkings, for hatching his eggs under properly-coloured hens, will also be noticed as the experience of an old breeder; and, indeed, we have hardly known one such who did not attach *some* importance to this point in breeding.

It has long been found from experience that the hen has most influence upon the form, size, and general *economic* or constitutional qualities of her progeny, whilst that of the cock more predominates as regards the "fancy" points. In other words, the hen chiefly influences the chicken from the skin inwards, whilst the cock more determines the feathering; or still again, as an artist friend expressed it, "the hen blocks in the picture, while the cock puts the finishing touches." That

the hen has very *small* power over these, however, is not meant; and, as a rule, we should consider the relative influence of the two sexes regarding fancy characteristics to be about three to two. The importance attached by the old Game-breeders to the quality of the hen has been almost always mentioned as an exception to this rule; but is not so in reality, the courage which was their main object being a constitutional and not a fancy quality at all.

Closely connected with the preceding is another fact necessary to be kept in mind in selecting breeding-stock, which complicates the question considerably, and the reason for which puzzled ourselves for a long time. We mean that the pen of birds which breeds an amateur his *best* cockerels, hardly ever breeds the best pullets, and *vice versâ*; so that all old breeders have what they really consider their "cockerel" and "pullet" pens; and acquiring a full knowledge of this matter is one of the greatest difficulties in "working up" a new strain. We think the reason of its being so may be explained as follows:—In the greater proportion of breeds, it will be found that the colour is very differently arranged in the two sexes; the light and dark being in the hen generally broken up into *small* touches or markings, whilst in the cocks one colour at least is often modified even in tone, but whether this is so or not, is almost universally arranged in *large masses*, the darker colour usually going to the lower, and the light more to the upper parts of the body. Grey Dorkings, Black-red or Duckwing Game, Partridge Cochins, or Dark Brahmas, will at once occur as illustrations. Hence it follows that the most striking cocks for exhibition will be those which develop the masses of colour with the greatest purity and sharpness, while the points which produce this may be quite different from those which breed in perfection the smaller markings of the female sex. As we have never seen this subject even alluded to before, we will illustrate it in preference from a breed which, as is well known, we have studied more closely than any other—the Dark Brahma. In this variety the colour is in the hen broken up into small markings, or pencillings of dark and light; whilst in the cock the breast and lower parts are almost one mass of black—there is a *broad* band of black on the wing, and another mass of black on the tail; the rest of the body being light, and even the hackle, which is more or less striped, being much lighter than that of the hen. Now the facts we have been considering govern the selection of stock in this way: a black-breasted cock of fine shape, whatever his hackle may be, will show well in a pen, and may probably breed very fine cockerels; but if too light in his striped feathers, will most likely fail in pullets. On the other hand, a cock with regularly-mottled breast will comparatively fail in breeding striking-looking cockerels, but if his hackle and saddle-feathers are densely striped, may probably produce first-class pullets, supposing him mated with judgment in other respects. It is possible for a bird to combine both excellencies, but such are rare; and until they are produced by the skill of the breeder himself, we will suppose him obliged to do his best with such materials as we have been considering. If our meaning has been intelligently followed, his course will now be clear. He will divide his hens and pullets into two classes; those with the most perfect and solid marking being reserved to mate with the male birds which have the densest hackles, with a view to producing chiefly pullets; whilst others, fine in form and size, and fairly good in general colour, but wanting in marking, may probably breed him some magnificent cockerels from the black-breasted birds. If one of the latter be "washy" in the hackles, perfectly-pencilled pullets would, in fact, be to some extent thrown away upon him, as he would not have density of colour to reproduce their marking. We have, of course, been supposing more or less imperfect materials; and it cannot be doubted that no breeder should feel satisfied with such, but should endeavour as speedily as possible, by careful breeding, to combine the qualities for breeding first-class chickens of both sexes in every pen, which can almost always be done in time. We say almost, because in some few breeds the birds required to breed cockerels cannot themselves be shown—such as "wheaten" hens

in Game and Game Bantams.* Long and careful breeding might, however, probably overcome even these differences, as has been done with Silver-spangled Hamburghs, the best exhibition cocks of which variety, some years since, had to be procured by cross-breeding, and often are still, but in the yards of one or two of the best breeders are now produced by pure and good pullet-breeding strains.

It will also be found that in a decided preponderance of cases the cockerels of a brood chiefly resemble the father, while the pullets "take after" the mother. Again there will be exceptions, but this will be the general rule; and it harmonises well with what we have been considering in the last paragraph, as from this point of view also, a cock presenting well the exhibition characteristics will be the chief thing as regards colour in making up a "cock-breeding" pen, while the best *marked* hens will be chiefly depended on for breeding pullets. At the same time, as will already have been gathered from our remarks on the last page, there are in some breeds points which careful observation can discover even in the cock, which chiefly influence the markings of the pullets bred from him, and points in the hens which similarly affect the character of the cockerels. These, so far as known to us, we shall enter more fully into in treating of the various breeds; but there is doubtless more still to be discovered in this direction, and we would yet again urge upon each one to *study for himself* those finer shades which furnish the materials for the breeder's art, and thus endeavour, both for his own sake and for that of others, to add to the existing knowledge of this interesting and important subject.

With regard to the ages of the birds which are to be bred together, there is no universal rule. Cocks and hens in their second season will always breed well together, and the chickens usually fledge more kindly than the produce of either older or younger birds. The offspring of cockerels and pullets mated together are worst in this particular, and in the large breeds are also more subject to leg-weakness. A cockerel mated with adult hens is preferred by most amateurs, and usually produces very vigorous and large chickens, but if only two or three hens be put with him there is almost sure to be a preponderance of cockerels. An adult cock mated with pullets is also a good arrangement. A valuable hen may be kept, and her eggs set as long as she lays; but except in rare cases, a cock is of little or no use after he is four years old, unless for exhibition, for which purpose we have known birds preserved for seven years and even more. In some cases, as we have hinted, productive vigour may be maintained beyond four years; and so long as a breeding bird of proved value shows indisputable liveliness and vigour it would be a pity to discard him.

We have hinted in the last paragraph that the breeder has some control over the sexes of his produce, and we may repeat here more definitely that the following have long been verified by general experience as ordinary rules, though numerous exceptions occur:—1. If a vigorous cockerel be mated with not more than three adult hens, the cocks almost always largely predominate in at least the early broods; later this becomes uncertain. 2. If an adult cock be mated with not more than three pullets the result is very uncertain, the one sex being as likely to occur as the other, but usually there is a decided predominance on one side rather than equality. 3. If an adult cock be mated with five or more pullets the pullets are generally in excess; and what cockerels there are will be most numerous in the earlier eggs. 4. Young birds or adult birds mated together are very uncertain; but the fewer hens and the more vigorous the stock, the greater is the proportion of cockerels, which are always more numerous in the earlier eggs of a season than the later. It is also a curious fact that chickens hatched late in the season are often *perceptibly more short-*

* See the chapters on these breeds.

legged than the earlier birds; we have often remarked this in our own yard, and it has also been observed by others. From these facts, while nothing like certainty can be obtained, it is manifest that the breeder possesses considerable power of obtaining such results as are desired.

Finally, we would say that after the birds are properly mated, they should not, if possible, be *disturbed*, as such disturbance frequently leads to unforeseen disappointment. A cock separated from the hens he has been mated with, and put to others after an interval, not unfrequently turns sulky and thrashes them severely, instead of showing them proper attention. We remember once buying in February a fine Brahma cock for a friend, which, though in perfect health, never took to his new mates, but always beat them unmercifully at feeding-time; and we found, on another occasion, our breeding for a whole season disarranged, and eggs sadly diminished, by a removal late in January, after the birds had been some weeks together. For this reason it never answers well to make a practice of exhibiting stock-birds during the breeding season. This foolish practice is very common among the many who care more for prizes than for their fowls; but when it does not lead to entire sterility (which is often the case) it almost always involves a weakly progeny. Once carefully mated, therefore, let the brood stock remain quietly in their runs till the season is over, when the chickens will probably do credit to the parents from which they are descended.

CHAPTER XII.

REARING, CARE, AND EXHIBITION OF PRIZE POULTRY.

SUPPOSING the breeding-stock to be mated with care and judgment, as described in our last chapter, we have now to consider how their produce may be turned to the best advantage; and one of the first points which will affect this desirable result is the obtaining of early eggs from the *adult hens*. We have already seen that the eggs of pullets, from their slower fledging, are not so suitable for the hatching of early broods; besides which, though they may be had in any quantity, the male parent being an adult bird is not so likely as a young cockerel to impart fertility during the cold season. Now we have found that very much can be done to secure this, independent of feeding and good housing, by judicious management of the stock hens during the preceding season. Every hen has a natural production of eggs, which can be to some extent, as we have seen, increased or diminished by the regimen to which she is subjected; but beyond this, the breeder has considerable power of controlling the period during which these eggs shall be laid: and as, to the fancier, one hundred eggs during the breeding season are of more value than considerably more of which a large portion are laid during summer and autumn, attention to this matter will be well repaid. It is the varieties which incubate that afford the greatest scope for control of this kind. Very probably a Brahma or Cochin may evince a desire to sit late in July or during August; and as it is of little use to hatch chickens so late, the fancier is tempted to turn her off, that he may obtain the eggs again as speedily as possible. Were the object simply the greatest number of eggs, this would be quite right; the bird would speedily lay again, and probably continue even till she had nearly finished moulting, as we have already observed at page 34. But in such a case early eggs cannot be expected; and it will pay the *fancier* far better to sacrifice even forty eggs in the autumn, for the sake of obtaining so little as ten or fifteen additional in the New Year. When the stock is good, these few eggs, even for selling, are worth more than ten times their number in the autumn; while for the owner's own setting their value, in a fancier's eye, may be beyond calculation. It is therefore preferable to let the best hens sit, however late, either on duck eggs, the produce of which may be easily reared for table, or if that cannot be done, on nest-eggs for about six weeks. This will both rest the system and hasten the moult. Even in the case of non-sitting breeds, much can be done by leaving off all stimulating food and changing the pen, so as to encourage the cessation of laying; and by acting on this system, eggs from a fair proportion of adult stock may generally be secured.

Feeding the stock with a view to *active vigour* will be of special importance. The production of the greatest possible number of eggs is not even here the chief point, but rather that such as *are* laid shall be produced by birds in the highest state of health of which they are capable; and this is another reason, beyond that stated in our last chapter, why the brood stock should not be used for exhibition at the breeding season. During very cold weather a little stimulating food, in the shape of cooked meat minced small, or some spice* added to the meal, or a little good ale mixed

* See this subject at page 141.

therewith, will be highly beneficial: but except the meat, which may be regularly given, these things should be carefully regulated by the daily weather; not given indiscriminately, but as helps on wet or cold days. A teaspoonful of tincture of iron to each gallon of water will also be very beneficial, and dry housing is of the first importance. We have mentioned these things before, and allude to them again here only because for stock which are expected to breed in the cold of winter or early spring it is all the more necessary to attend to them.

We need say very little in regard to the hatching or rearing of the birds in the early stages, having already treated of these points. The stock being supposed to be of value, it is only needful to insist on *special* care being taken that no neglect be ever allowed to occur; but that the best food, in proper quantities and at proper intervals, be regularly given, and the greatest cleanliness scrupulously observed. For very early chickens a house partially protected with glass is of the greatest service; but as commonly made, with the whole front glazed in, the atmosphere is generally too close to be beneficial. In our own case we have two sheds twelve feet long each, one being glazed for four feet in length from each end, and the other from one end only, the remainder of the front being boarded up for a foot and the rest wired, the roof being loose tiles. By this arrangement ventilation is all that can be desired, and whatever be the direction of the wind the chicks are thoroughly protected, while they can bask behind the glass, on cold but bright days, with the greatest enjoyment. A large shed by way of nursery, as shown in the plan of Lady Gwydyr's yard given in Chapter I., is also of the greatest benefit; but whatever be the accommodation of this kind, in fine weather a door should always be open to allow the chickens to run out at pleasure, except perhaps in the case of very delicate breeds, such as highly-bred Spanish, and even these many of the best breeders prefer to allow their liberty. Milk should be freely used, both in the food and as drink. Buttermilk is excellent where it can be had; it causes more or less scouring at first, but this quickly passes off, without ill result. Custard we have already spoken of, and can only advise its employment for one daily meal. Mr. Douglas, for whose authority we have the highest respect, has by a mistake in another work been represented as advising it far more liberally than he has personally assured us is the case. He chiefly employs it, as directed in his notes on the Game Fowl, for the morning meal, and then to be squeezed as dry as possible. The number of chickens lost by liver disease through this unfortunately mistaken advocacy of wet custard, has been very great, and has led us to make these remarks. At night or early morning, and with the *whey strained out*, as really prepared by Mr. Douglas, the case is different, and custard thus used will do wonders during cold weather. About ten o'clock is the best time for the night feeding of the early chicks. At first they will not come out of their own accord; but by lifting the hen off bodily, and immediately putting the food down among the chicks, they will soon be hard at work, and after a night or two will come out eagerly of themselves. Chickens hatched at or after the end of March do not require this attention.

The "condition" and forward growth of Lady Gwydyr's young stock are well known to all English fanciers; and we have much pleasure in giving the following description of the manner in which they are reared, which has been kindly furnished us by Mr. Frederick Wragg, the superintendent of her ladyship's poultry-yard, and a veteran poultry-fancier and breeder. "You must get up very early in the morning to beat Freddy," is a remark we have heard on many occasions; and the emphatic stress laid on plain and wholesome feeding by such authority will we trust be regarded by many an amateur.

"In giving my system of feeding, it will be as well to commence from the shell. I very seldom remove the chickens from the hatching-nest until they are twenty-four hours old; they are much

stronger when thus left with the hen. I have large sheds under which I coop the hens with chickens: they are six feet high in front, sloping backwards, the back being two feet from the ground, and close boarded; one end which receives the cold winds also close boarded, and the other end and front open, the roof covered with zinc. The ground under the shed is loose gravel, run over every morning with a small-toothed rake; outside the sheds is grass. Under these sheds I put several coops of chickens, and I scarcely ever lose a chick, be it ever so early in the year. The zinc roof answers admirably; when the sun gets out, even in the coldest weather, the warmth on the ground reflected from the zinc causes the little things to be full of life, and very seldom troubled with cramp, a complaint so fatal to very many early-hatched chickens.

"We will now consider the chickens safely cooped out; and now comes the feeding, which has been the downfall of many, and about which so much has been said and written. My plan is as follows:—If early hatched, the first thing I give them is warm milk in a small shallow plate or tea-saucer. I then have an egg boiled hard, and bread crumbled and chopped up with the egg; give a little of this every hour or so. If you are having a rice-pudding for your dinner, do not forget to save a little for the chicks, and give it to them while it is warm. Small bits of meat and suet-pudding from the table are very much relished, and give them strength. The nights being very long they must be fed by candle-light, which they will readily do after they get accustomed to it.

"When the chickens are a week old, and have got nice and strong, leave off the eggs entirely, and give oatmeal, well boiled; mix it with dry meal until you can crumble it with your thumb and fingers; this will bring them on better than anything. Get some wheat also, and have it split up; they are very fond of this. The first thing in the morning give them warm milk to drink, the rest of the day clean water. Warm milk is only necessary for early-hatched chickens until they are five or six weeks old. When arrived at this age avoid feeding too often. How often do you hear it said, 'You cannot feed them too often;' but I say you *can;* the little things get surfeited, and refuse to feed altogether. If it is light at six o'clock in the morning, be up and doing. If the oatmeal is boiled the night before, and left on the hob, it will be easily warmed the next morning; if it is dried up, break some up on a plate, and pour a little warm milk on it. Give them as much as they will eat of this, and after seeing that they have fresh water in the pan, do not go near them for three hours, and then take them some broken-up wheat, and you will find them ready to meet you; and you will soon see by the way they pitch into it that they are hungry, and mean to fill themselves. Never forget the scraps from the table, and let the last meal at night be oatmeal, mixed with Indian meal, boiled.

"If they have grown as they ought to do, at two months old they are ready to take from the hen, and if the weather is at all open the chickens will do better without the hen. My advice is, never feed now more than four times a day. My plan is as follows:—I have the chickens out as soon as it is daylight, and they have an hour's ranging about to get them in order for their first meal. While they are roving about I have the fire made up, and a large saucepan full of water put on; I then go in the food room, and put the meals together. I have a large zinc pan, and I put equal quantities of fine middlings, Indian meal, barley-meal, and the best ground oats, and a complement of coarse bran; I sift all the meals well through my fingers. I then hollow out the middle, and pour in the boiling water, and with a trowel I thoroughly mix it into a thick, crumbly mass. When mixed, I press it into lumps the size of a cricket-ball, put them into a zinc bucket or pail, and go round the lot, generally about six o'clock. I give a whistle at certain places where I feed, and they come flying and running in all directions. I always stand throwing them lumps until they have had enough, and begin to walk away. I follow the same plan with the next lot, until they have finished; the chickens take me about one hour. I then go through the old stock

with the same food, and when these have done I am in good order for my own breakfast. While I am feeding the stock, I have a man going round rinsing all the drinking-pans out, and putting in fresh clean water; this will take him until breakfast-time. His next work is to remove all the coops, raking up the dirt that has been made during the day and night previous. It is much the best to coop hens on gravel near grass-run, so placed as to catch the early sun; but when the sun is hot and bright, turn the coops with their backs to the sun. Let the pans with water be carefully screened from the sun. The man's next duty is to attend to the old birds, cleaning out the roosts, shaking up the straw that is placed in one end of the roost for heavy birds—such as Cochins and Brahmas—to sleep on; the yards are also carefully raked over. When this is done, a few fresh-pulled lettuce or cabbage leaves are thrown down in each run, or what is better, tied up on the side partition of the yard. From ten to eleven o'clock I go round the chickens with wheat, changing it once or twice a week for hemp-seed. At noon the man has to go round with fresh clean water. From three to four o'clock in the afternoon is my feeding-time, being soft warm food same as the morning, adding at times a saucepanful of boiled rice, boiled in skim milk. If the sides of the saucepan be rubbed with a lump of suet, the rice when properly boiled—that is, when the rice is on the point of bursting—will all come clean away from the saucepan. Take and turn it out in your mixing-pan, and mix it well up with fine middlings. Feed the chickens on this; there is nothing they like better, and you can almost see them grow: and this feed keeps away the 'scours,' which I am scarcely ever troubled with.

"When the chickens are returning for the night to roost, go round them with wheat or broken-up maize, throwing them a few handfuls, but standing while they eat it, and carefully avoid giving any more than they will eat. While they are eating you can count them over to see they are all there. If you can put in each of the chicken-runs a heap of burnt oyster-shells broken up, and broken bones, the chickens will thrive all the better, and be seldom troubled with leg weakness. If you can, give them now and then a barrow-load of lettuce; if they have ever such a grass-run they will eat it, and nothing can be better for them.

"My old stock are fed in the morning on the same food as chickens, the latter being served the first. In the middle of the day the stock have a little wheat; in the evening they are generally fed on small maize. I may add that I always mix the food and attend to the feeding myself, and I think it the duty of any superintendent of a prize poultry establishment to do the same. By so doing he can see at once if a chicken refuses to eat, or has met with an accident, and by prompt attention they are soon set right again; where an assistant would in nine cases out of ten never notice anything until the chicken was past recovery. Then again, there is no estimating how much food is saved by doing it yourself. The above system of feeding and management of chickens I have proved to be satisfactory, their growth and condition being all that could be desired."

Mr. Wragg's own experience refers chiefly to Asiatic breeds, and it will be instructive to compare his general directions with those of Mr. John Martin for rearing Dorkings, or those of Mr. Douglas for the care of Game. But the general principles to enforce are the same in all; and his last remark, relative to the saving in food by careful feeding, is particularly worthy of attention. In a large fancier's yard, rearing from one to four hundred chickens, the consumption of meal is very great, and it is of the utmost importance to see that just enough is given and no more. In this way a waste of from £20 to £50 per annum may be avoided; and an economical feeder will thus be able to *afford* the purchase occasionally of the "crack" bird of the year, without costing his employer any more, or even so much, annually, as another poultry-man who makes no purchases, but is less careful over the ordinary expenses of the yard.

There is, however, one ingredient in chicken-feeding which deserves special notice, being of the greatest assistance to those whose space is limited. We allude to the bone-dust, or ground *dry* bones, which is often used by gardeners in potting plants. For the knowledge and use of this ingredient we had originally to thank Mr. John Stuart, of Helensburgh, well known in Scotland as a successful breeder, and to whose unvarying friendship in many other ways and instances we feel pleasure in acknowledging heavy obligations. After full and satisfactory trial ourselves, we had no hesitation in recommending the use of bone-dust to other breeders;* and the extent to which other writers have followed us in various periodicals, and to which the substance is now advertised in the poultry papers, besides the many private testimonies we have ourselves received, are conclusive evidence of the value of an article of diet which Mr. Stuart's kindness had enabled us to be the first to introduce generally to poultry-breeders. We do not pretend that bone-dust is of any special assistance to those who have at command unlimited grass-range over a good soil, or to those who rear chiefly small but hardy breeds. Neither of these require it, though even then its use usually affords some benefit, with no trouble and scarcely any expense. But to weakly breeds, especially such as—like La Flèche—suffer from leg-weakness, it is of the greatest service; and to such as wish to rear large birds in a limited space, it is the most valuable aid with which we are acquainted. Its effects are, 1, to supply abundance of bone-making material; 2, to counteract any tendency to diarrhœa, causing the excrements to assume that firm character denotive of perfect health; and, 3, greatly to postpone what poultry-men call "setting," or maturity, and thus ensure a longer period of growth, on which ultimate size so greatly depends. Being ground up whole, a fair amount of animal food is also contained in the bone-dust. The year after we first made publicly known the benefit to be derived from this ingredient, we had a letter from an extensive breeder of Light Brahmas, stating that he could more than confirm all we had said; that, on trial, his birds that season showed far more bone and substance than ever before; he had not more than half the usual number of cockerels with any weakness in the legs; and diarrhœa, with which he was formerly troubled, had disappeared. We have other letters to the same effect from well-known English and American fanciers.

Bone-dust for mixing in poultry food should be on an average about the fineness of coarse oatmeal. There are usually larger pieces interspersed, but these need not be taken out, as any too large will be rejected; though the meal may be sifted free from any larger than peas if desired. The price being never very much more per hundredweight than good meal, it should be used liberally with all the soft food, and about an ounce may be mixed with every half-pint of dry meal before adding the milk or water. In small yards, as we have already said, cut grass must be liberally supplied as well to the mixture; and on such food the birds will grow wonderfully, and acquire a constitution which *in confinement* we have never been able to attain in any other way. We may say that *burnt* bones pounded have not by any means the same effect, being reduced to mere phosphate of lime with some amount of animal charcoal; neither have crushed *raw* bones, which have been stated by some to produce similar results. On the contrary, raw bones have been proved by the very simple test of experiment to *hasten* laying in the pullets, and "furnishing" or feathering out to maturity in the cockerels, as might be expected from the quantity of fresh jelly they contain—hence, while excellent in moderation for laying stock, or during a limited time to prepare cockerels for actual exhibition, they are *not* adapted for the regular food of chickens whose period of maturity the breeder for exhibition rather desires to postpone. That this postponement, and with it continuous growth, is effected by the dry bone-meal, we have most fully proved; and in the case of weakly breeds, which have it for its strengthening power, but

* "The Brahma Fowl," Chap. IV.

which it is *not* wished to increase in size, the changing it at the proper time for *raw* bone will produce all the desired effect.

In this place, also, it will be best to discuss the question of the benefit to be derived from the use of condimental or "prepared" poultry foods, as advertised by various manufacturers, at prices ranging from 20s. to 35s. per hundredweight. There can be no doubt, according to our own experience and that of most breeders, that the occasional and judicious use of stimulants or spices is of the greatest service. On very cold or wet days they often have a marked effect in preventing or obviating ill effects, especially in early broods. The *rationale* of such use is obvious, being strictly in the nature of medicine rather than of food; but when the vendors go further, and recommend the *constant* use of their nostrums, it becomes necessary to examine the question differently; and we feel obliged to remark that the promises usually made in the laudatory circulars issued are simply self-destructive or contradictory. Thus, when it is said that a certain stimulating food often causes laying at the age of four months, we can readily believe that; and when it is said that it increases the size of the birds, we can at least understand, though we can hardly believe that; but when it is said—as it *is* said in a pamphlet before us—that it does *both*, every practical breeder will see at once that the very early maturity first spoken of must of inevitable necessity *deteriorate* the ultimate size of the bird, though very probably early size may be to some extent increased. Accordingly, we have never but once seen a testimonial from any eminent breeder in favour of the constant use of these foods, except his birds were either pheasants or *small* varieties of fowl, in which condition and early maturity were of more importance than size. That exception was in the case of a first-rate poultry-man, whom we have already quoted with pleasure in these pages, who bred Asiatics, and who published a very favourable account of his experience in one of the poultry journals. We ventured at the time to hint that he would probably change his mind, and wish by-and-by to withdraw his testimonial; and meeting him again some time after, he informed us that we were quite right; that the food was first-rate for "forcing on" birds, or for small varieties; but that this very quality did, as we predicted, quite *prevent the ultimate growth* of his Asiatic fowls, and that he had now in consequence entirely discontinued its use as a regular diet for his fowls.

As regular diet, therefore, these foods cannot be recommended; besides which there is the important consideration of cost. One which has been perhaps the most extensively advertised costs 30s. per hundredweight; and as good oatmeal for feeding purposes can be bought almost always for 15s., and other good meals for little more than 10s. per hundredweight, the difference is really enormous. In treating of similar foods as prepared for cattle, Mr. Lawes has some valuable remarks in the Journal of the Royal Agricultural Society, from which we may extract a few sentences with benefit:—"It will be clear," he says, "that these manufactured foods cannot substitute any of the necessary constituents of our ordinary stock foods any further than they themselves supply them. So far as the mere supply of alimentary constituents is concerned, a mixture of [various ingredients] can provide these at one-fourth to one-fifth [in our case one-half to one-third] the cost of the specially-made artificial foods. Such food cannot therefore be relied upon as staple articles; the virtues which they really do possess over and above those which could be secured at one-fourth [one-third to one-half] the price are confined, therefore, to the action on the health and digestion of the animals of the small amount of stimulating and carminative seeds which they contain. In fact, so far they are *sauce or medicine* rather than food." He then gives an experiment in pig-feeding, which showed no advantage in favour of the "prepared" food, over food judiciously mixed at one-fourth of the price. Mr. W. C. Spooner, of Southampton, also remarks on this subject, admitting that as stimulants the foods may be and indeed often are

beneficial; but observing in conclusion, "It is true that this effect can be produced as well by giving the animal his food properly ground or in the form of meal, and, if need be, *assisting him occasionally* with some tonics or cordials; but there would be nothing *mysterious* in this, and John Bull is fond of the marvellous." It will be plain, as is justly remarked by another high agricultural authority, Mr. J. C. Morton, that "the medicinal compounds cannot be in very large proportion, or their influence would be excessive;" and hence that all the remainder, beyond what is needful to counterbalance the cost of this small seasoning, is paid for at two or three times its market value. In Mr. Morton's words again, "we recommend our readers, therefore, to try [various meals] and mix them for themselves; and if their cattle [poultry] want a stimulant let them consult their veterinary surgeon how best to *medicate* the food thus home made. They will find it a wonderful saving to their pockets."

We cannot but regret that all those makers who profess to have any valuable recipe for tonic combinations of spices do not vend the *spices alone*, avowedly as mere seasoning. We believe the sacrifice of profit on food sold at thrice its value would be fully made up by increased demand, and by saving in bulk and expenses; and in such a shape, to be used with discretion for special purposes or to prepare for exhibition, we could honestly recommend them, knowing one of the very foods we have had more particularly in view to possess unquestionably great value in these respects. At present one or two vendors only do this; and for the use of those who may desire to prepare something of the kind for themselves, we give the following as recipes which have been tried and found to do good service:—

1. Liquorice . . . . . 2 oz.
   Ginger . . . . . 2 ,,
   Cayenne Pepper . . . . . 1 ,,
   Aniseed . . . . . ½ ,,
   Pimento . . . . . 2 ,,
   Sulphate of Iron . . . . . 1 ,,
   Powder and mix.

2. Cassia Bark . . . . . 1½ oz.
   Ginger . . . . . 5 ,,
   Gentian . . . . . ½ ,,
   Aniseed . . . . . ½ ,,
   Carbonate of Iron . . . . . 2½ ,,
   Powder and mix.

3. Peruvian Bark . . . . . 2 oz.
   Citrate of Iron . . . . . 1 ,,
   Gentian . . . . . 1 ,,
   Pimento . . . . . 2 ,,
   Cayenne . . . . . 1 ,,
   Powder and mix.

4. Cascarilla Bark . . . . . 2 oz.
   Aniseed . . . . . ½ ,,
   Pimento . . . . . 1 ,,
   Malt Dust . . . . . 2 ,,
   Carbonate of Iron . . . . . 1 ,,
   Powder and mix.

The first powder is chiefly adapted for a sudden cold. The second will be found excellent as a tonic in wet or cold weather, or for young turkeys, being the recipe of Mr. Mills, a French apothecary, which has been well tested. The two last are also tonics; the last, or one somewhat like it, being preferable for more *continuous* use when required, or in preparing fowls for exhibition. As a restorative after return from exhibition we would prefer No. 3. The No. 4 recipe may be mixed with sugar at discretion, in the proportion of three parts *good* sugar to one of powder; this addition will assist in making weight, and is liked by the fowls, but too raw a quality must not be used, or purging will be the result. In using either of these condiments otherwise, enough should be added to the soft food to give a slight characteristic taste and no more; except for special occasions, when it is better to mix about as much as will lie on a sixpence or ten-cent piece with a small bolus of meal and butter, and give as a large pill. Another most valuable tonic is "Parrish's Chemical Food," or Syrup of Phosphates, prepared according to the formula of Mr. Edward Parrish, of Philadelphia, which is every day becoming more valued amongst medical men for more serious purposes than that now considered. Being expensive to purchase at the chemists'

ready prepared, we give the formula in the chapter on Diseases. It may be given to weakly chickens continuously, in the proportions of a teaspoonful of the syrup well mixed in every pint of water.

The parentage of each brood of chicks we need hardly say should be carefully noted down in the hatching book; and if that of every egg sold be also recorded, it may afterwards prove of the greatest service should it be wished to obtain a bird back from a particular strain. This is easily done as follows, which is our own manner of recording such matters. We will suppose we are breeding from three cocks called respectively "Uncle Sam," "Goliath," and "Sambo" (names are a real assistance in these matters, not merely freaks of fancy), and that out of many pullets and hens we have several of more than usual excellence or tried value as breeders. Then an entry in our egg-sales memorandum-book for any given year might read as follows, each entry being ruled off like those in a storekeeper's day-book:—

April 10.	Mr. JOHN SMITH, Blankville, Blankshire. 3 Goliath (1 Princess), 4 Uncle Sam (2 Countess), 3 Sambo.	10*
May 2.	Result—7; (1 Uncle Sam and 2 Goliath were clear).	

The result would be filled in when stated, as it almost always is, by purchasers in due time; and if the eggs are marked with at least the name of the cock whose pen they come from, such particulars also are frequently repor ed. Then supposing we had bad luck with the chicks from the cock called "Uncle Sam," who is perhaps getting old, hatching hardly any from him; and that our hen "Countess" is either dead or sold; on looking over the register of sales towards winter, we find that Mr. John Smith had at least one if not two chicks from the best hen in "Uncle Sam's" pen; and if he reared them safely we stand a good chance of buying back at a fair price a bird which in our then circumstances may be invaluable. A little pains and method in these matters is always well repaid in the end.

As the home chickens grow large enough to leave their mother, it is of equal importance that this knowledge of their origin be preserved. In many cases, where constant attention is given to the fowls, the memory alone may be trusted to ensure this, as every individual chicken out of even a hundred may be easily recognised by a real amateur who takes an interest in them; but usually some kind of permanent mark becomes necessary. Some cut a small nick on the bill, and others punch small holes through the web between the toes; but both these methods, if at all conspicuous, of course proportionately disfigure the bird, besides involving the danger of disqualification if noticed in the show-pen. By far the best plan is to extend the wing of the chicken, when a triangular web of mere skin will be found between it and the shoulder, which can be pierced in an instant by a stout, red-hot knitting-needle. This method may be thought cruel; but the pain really appears only momentary and the part almost devoid of feeling, for after the instant which it occupies the chick appears to take no notice whatever. The needle should go through and be withdrawn with a single, swift, "pecking" kind of movement; and by thus piercing one, two, or more holes, thus . : ∴ ∵ :: any desired distinction may be observed, especially as

* After long experience, we now invariably send out only *ten* eggs as a sitting. We have always found that *on an average* there is a larger production of fine birds from this number than more; and, indeed, a hen cannot cover more than about seven Asiatic chickens at a month old. In small breeds this limitation would not apply.

they can be made in either the right or left wing. These marks are permanent; but if desired to be more easily found, a small bit of coloured silk may be drawn through one of the holes to mark the place. For more temporary purposes, the best plan is to tie a bit of coloured worsted securely, but rather loosely, round the leg above the foot, or to sew a piece of coloured tape round in the same position.

In small yards the changing weather should be carefully studied. On very hot days the ground may be copiously watered with marked benefit, and shelter should be provided by propping up boards or hurdles about a foot from the ground, under which they can resort to avoid the sun. In very wet weather, should cramp appear to threaten, a few days' removal indoors to a boarded floor well sanded will do wonders; and while no floor is worse than wood for a continuance, no harm in such a case will result.

As soon after they are ten weeks old as possible, the cockerels and pullets of large breeds at least ought to be separated. With small fowls it is not important so far as size is concerned, and three or four weeks longer need give no trouble or uneasiness even with Asiatics; but after that the cockerels will begin to be turbulent unless separated, and this latter reason applies to small breeds as well. It is not so necessary where *very* wide range is at command, as the birds are not then brought so much in contact; but even then is highly advisable. The sexes of most breeds can be distinguished at a very early age. In some, especially Asiatics, the cocks may be known by the first wings being narrow and pointed, and of a more or less darker colour; while the pullets' wings are broader, rounder at the end, and either pencilled or of the self-colour of the breed. In a few breeds this does not hold good, the cockerel's wings being if anything the larger of the two; but in all breeds we believe the pullets fledge the quickest, especially on the back and down the breast. In general the heads of the cockerels are also larger, the combs more prominent, and the carriage taller and more upright. Nearly every fancier can tell the sexes of his own breed at a very early age; and Asiatics at least can easily be distinguished at about a fortnight to three weeks old, after a little experience and observation.

The same period is convenient for "weeding" the yard, or looking the chickens carefully over in order to pick out those which are only good enough for killing. Happy is the fancier who has but few of such!—though with every year the proportion should decrease, and there are breeders who can produce chickens of which more than half are fit for exhibition. We have already spoken of the importance of being able to distinguish early between chickens which are likely to be first-class and those which are worthless; and will only here add that after some study this can often be done in great measure at a very early age. By the time we are considering, the amateur who has had a little experience should be able to make the needful selection pretty easily, and the knife should be extensively used with a stern hand. Many young amateurs make a very great mistake here, by not killing off nearly enough of their stock. At commencing, the proportion of such "wasters" will almost inevitably be very large. Let us suppose that about thirty chickens can be reared, and that the preceding year our young fancier hatched forty and killed ten of the worst, finding probably that only ten out of the thirty left were up to exhibition or breeding standard. With the experience of that season, he will be able to do his weeding now more carefully, and may probably determine that he will hatch fifty and kill off twenty; whereas it would be far better for him to hatch eighty or ninety, and only keep the thirty best. Later on he will not need, if he uses judgment, to hatch nearly so many to obtain his thirty good chickens; but many a young amateur would obtain a good position far earlier than he does, did he thus hatch and kill more liberally, so as to retain *good* chickens to the extent of his accommodation. Again, when chickens are being reared for exhibition, even supposing thirty can be kept, twenty would keep

in better condition and do altogether better in the same space and with less attention. Again, a run containing only pretty *good* birds has a wonderfully more pleasing effect to the eye of a fancier than another consisting partly of inferior specimens, and also assists in that training of the eye to *perceive and demand excellence* which is perhaps the real secret of permanent success. We would of course by no means advise killing until the power of distinguishing between good and bad has been acquired; but after that, the more freely the chickens are eaten the better it will be for the yard in every way; and they may be killed and got out of the way very young by using them for such "chicken puddings" as described at page 86. Some of the signs by which waste birds may be weeded out we shall point out in the proper places, when treating of the different breeds.

We believe the *very best* results possible in chicken-rearing are obtained by keeping a comparatively small number in a moderate-sized grass-run, nicely shaded with trees, and a spacious shed with a flooring of dry sand or gravel kept perfectly clean. Kept in large numbers, on unlimited grass, the birds grow up in beautiful condition, but often mature rather too rapidly and do not become so large; whilst in small gravel yards, though size is easily obtained and good condition may be secured, the exquisite gloss so beautiful in grass-fed fowls is very difficult to produce, and large cockerels frequently become heavy and ungainly in carriage for want of exercise. We speak comparatively, of course; for much depends on the skill and care brought to bear, and we often see the very best country yards beaten by people who only possess a few square feet in town; but a dozen chickens in a grass-run of about twenty by fifty feet will take care of their condition for themselves with less real trouble than in any other circumstances.

For exhibition, chickens of large breeds ought not to be allowed to roost for at least four months. The cause of crooked breasts, which so frequently occur in all large fowls, has often been discussed; and it will be noticed that Mr. J. Martin, in his notes on Dorkings, quite dissents from the usual view that broad perches are preferable to small. We are bound to say that our own and general experience goes the other way; and many people have observed that pheasants commonly roost on the *large* branches, contrary to Mr. Martin's remark on that bird. Our own observation, however, has led us to the conclusion that perhaps the preservation of good breasts in large chickens allowed to roost depends chiefly on the *tone* of the system: those which have wide range and are not overfed, if of good constitution, rarely suffering, while those bred in confinement are very apt to become crooked. At four months, therefore, birds reared on a good open run may generally roost on a broad perch without danger; but if bred up in confinement we would far prefer to roost them on straw. In this case, by far the easiest and cleanliest plan for an amateur who attends to his own fowls is to have a broad shelf of wood planed smooth on the warmest side of the house, about a foot from the ground; to slightly sprinkle this with sand to prevent the droppings adhering, and then litter pretty freely with well-broken straw. Every day this is to be well shaken up, and it will generally last about a week, when the whole is to be removed. A little paraffine, kerosene, or carbolic acid occasionally sprinkled on the wood will quite keep away vermin, and the advantages are, *perfect* dryness and freedom from draught, and the easy removal of all the droppings, &c., from the smooth hard surface, without the inconvenience of stooping. Chickens also prefer thus roosting on a slight elevation to a lodging on the floor. Instead of straw, dry ashes or sand make a pretty good roosting bottom, but are neither so clean nor so warm for growing chickens, though superior in both respects for very young ones.

At about six months old most chickens have assumed their adult appearance; but cockerels of the Asiatic varieties very often are not fully feathered or "furnished" till eight or even nine months, especially when bred from young parents. The chief danger during this period is leg-

weakness; but as we shall treat this in its place among diseases, we do not further discuss it here; the more so as the bone-dust we have already recommended will greatly obviate any trouble in this way. There is however another misfortune to which many varieties are liable during the acquisition of the adult plumage, which will be better dealt with in this place. Asiatic breeds are the most frequent sufferers, though others are also liable to what frequently disappoints a fancier's hopes from his finest birds. We allude to what poultry-men call "slipped" or "turned" wings: the primary feathers, or those which ought to be nicely tucked away out of sight when the wing is closed, protruding in more or less disorder outside the others. That this tendency is to some extent hereditary there can be no doubt; and it mars the beauty of a bird completely, amounting almost to disqualification in a good competition. Pullets are far less liable to it than cockerels, and therefore when it occurs in the female sex it is proportionately far more serious in character. In the most aggravated form, the flight-feathers appear actually *twisted* round the quills, so that the proper inside of the feather becomes outside; and in this form the affection is both *strongly* hereditary and we believe incurable. But when it merely amounts to a failing to tuck the flight-feathers in, without any great disorder among those feathers themselves, it may almost always be

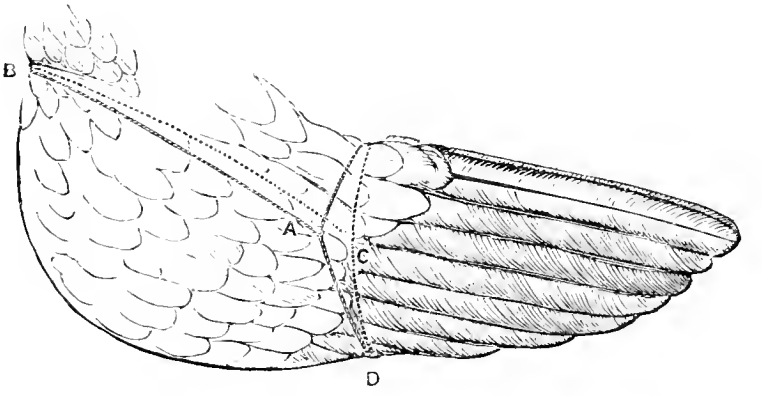


Fig. 49.

cured if taken in due time. The usual cause we believe to be the buffeting of cockerels by their stronger neighbours, which causes rapid flapping followed by imperfect return; and after a few times this becomes habitual and the mischief is done: at least it more rarely occurs in a wide run, or in the master-bird of the yard.

The treatment is very simple. As soon as any displacement of the new feathers is observed, the wings should be carefully tucked up every night at roost, but nothing further can be done till they are grown enough to hold a ligature, when one or both wings, as required, should be carefully bound up with each feather in proper position. The manner in which this is done is shown in Fig. 49, the wing being bound round rather tightly as near the shoulder as possible, after which the cord is carried from the knot at A, round the shoulder at B, to the inside part of the ligature at C; this is of course simply to prevent the ligature from slipping off, which the bird will inevitably use all his endeavours to effect. Soft string about the thickness of stout whip-cord should be employed, and the operation be performed at night for the sake of quietness. A little judgment in tying is necessary, as if the retaining cord be too slack the bird slips the bandage off, while if too tight it will cut and become embedded in the web of the wing, causing irritation and distress. Patience and tact are also required, and we have had birds we were obliged to tie up afresh for five or six nights before the feathers were retained in place to our satisfaction. The greatest care is to be taken that *every* feather is in position, on which all depends; and the bird is then to be left with

his wing or wings tied till it may be supposed all the feathers are properly set. The ligature may then be cut, when if the result is satisfactory all is of course over; if not the wings are to be again confined. So much as two months' of this watchful care may be required in some cases; but there are few but may be thus cured if taken in due time. The ligature has a tendency to cut the feathers, but this may be avoided by using instead of a simple cord a diamond-shaped piece of calico with a string sewn on at each end, when the shorter diameter of the calico instead of the cord will go under the wing at D, and preserve the wings from injury.

There is always some slight danger of Asiatic cocks acquiring the same fault during the moult. If the wings are seen properly tucked up every night at roost nothing further will commonly be needed; but if the blemish should appear to be becoming habitual, it must be treated in the manner just described.

It is very prejudicial to their chances of exhibition when pullets lay too early, besides hindering their ultimate size; and much can be done to avoid this with a little care. After about four months, all stimulating food should be discontinued, except in the case of birds hatched very late, in which case no apprehension of too early laying need be felt, and they should rather be pushed on as fast as possible. But in ordinary cases, meat, milk, and especially any condiments which may have been used occasionally (we have already said it is injurious to use them except for special reasons) should be withheld, and every three or four weeks the pullets should, if possible, be removed to a strange run. This last can generally be done by exchanging, and has a great influence in retarding the commencement of laying; but it should not be carried too far. After about seven months it is best to let things take their course. We have acted otherwise, and—partly as experiment—succeeded, by careful change of run as required, in keeping pullets from laying till past *ten* months old, but the result was not satisfactory, the birds never in fact laying as they should have done afterwards. Up to seven months or a little more, however, it is of great advantage to have the laying thus postponed, as going to the nest daily soon injures the plumage for close competition. A pullet never looks so well as *just before* she lays her first egg; and in getting ready for the chief winter shows, a great point in management with successful breeders is thus to turn their chickens into the show-pen in "the very nick of time;" which is best done by keeping them back previously, and then "winding them up" by judicious treatment so as to arrive at their very best just when wanted.

As to the ages which afford the greatest facilities for obtaining this result, we have often had occasion to observe that pullets have been hatched too soon, and by the time they have to be shown at—let us say Birmingham—have got long past their best condition. From six to seven months, in most breeds, will be the most promising ages in general; but some breeds—as for instance Spanish—require much more. Cockerels, on the contrary, are generally best at from eight to nine months old, and as far as possible, therefore, cockerels should be bred in the earliest broods, that they may be mature enough for the pullets hatched later. The means by which this can to some extent be secured were mentioned in the last chapter.

Which chickens are best for showing will depend much upon the time of year. For early shows the forward, "pretty" birds do best (we speak chiefly of cockerels; in pullets there is not so much difference), but such rarely make the largest and finest fowls; these latter are almost always the big, raw, lanky-looking brutes, only half-fledged when others are nearly mature, and which an ignorant outsider would probably select as the very ugliest of the lot—yet *these* it is which make the giants of the show-pen, and in December or January carry all before them. Such cockerels, got out early in April, almost always make eventually finer birds than those hatched either later or before.

We have now reared our chickens, and a few words on the preservation in good condition of either these or other fancy fowls may not be without service. The causes which tend to injure this are chiefly the sun, dirt or wet, and injury or wear; and to state these is, in a great measure, to imply the means of preservation. The very best possible arrangement will be, a dry house with a roomy shed at the side floored with clean yellow sand, and with a moderate grass-run in front well shaded with trees. The grass should, however, be kept *short* by mowing, or the plumage of feathered breeds especially will become draggled. The hole by which the fowls enter their house must be of good size, and all doors should be fastened *wide open* when open at all, to avoid any injury to the tails. For the same reason, the perch must be fixed so far from the wall that the tail of the cock can in no circumstances touch it; and if it rest at the ends on ledges fixed to the wall of the house, a bit of lath should be tacked slantwise upwards from a few inches off the end, thus, _____/ in houses inhabited by light-coloured fowls. The object, of course, is to prevent the birds—the cocks especially—from roosting with their wings against the wall, and thus getting them soiled. Examination should be made every night to see that each bird is properly accommodated, and none squatting in corners on the dirty ground. The fowls, again, should never be rashly driven about or frightened, which often causes the loss of tail or other feathers that can ill be spared. Whenever they are wanted, for show or otherwise, let them be quietly taken from their roost at night, when they will make no effort at escape or resistance. None of these things give trouble—they only require thoughtful remembrance; but they make a wonderful difference in the condition of birds so cared for over that of others differently treated.

In small yards greater pains are needed. A good dry shed will be still the chief point, floored, if possible, with clean sand in which a little powdered slaked lime has been mixed; and in this the birds which it is wished to retain in good condition should be always confined in wet weather. The yard is better if sanded or gravelled too; but earth will suffice if necessary, though in this case the birds *must* be confined except when it is quite dry. Some sort of shelter from the sun must be contrived for all white fowls if there are no trees in the run; for nearly all such birds when exposed to it turn rapidly more or less yellow. Some sort of awning can generally be devised which will answer the purpose; and the expense is well bestowed on any really valuable pen of white-plumaged birds if occasional exhibitions be at all in view. A little morning sun may be allowed, but it may be safely affirmed that nearly all the fowls which appear at summer shows in such very beautiful white plumage have been kept either under cover or on deeply-shaded grass-runs. Feeding and general health will, of course, be carefully attended to; but on this head we need add nothing to what we have said in previous chapters of this work. We here only remark that when, as frequently happens, only two hens and a cock of first-rate quality can be afforded for one pen, it will be well to put some additional hens of any common breed (not too different in colour, for reasons given in the last chapter) with the trio, in order to prevent damage to the plumage. Indeed, as the summer advances, and the feathers become more brittle, if adult hens are wanted for show it is better to keep them from the cock altogether, except for a very brief period morning and evening, and even this should be dispensed with as soon as the breeding season is over.

Another point of some importance is that the birds be *kept tame*. The regular attendant—be he master or servant—should take every opportunity of petting them. Without over-feeding, two or three odd grains of barley thrown every time of passing will establish friendly relations; and it is also well to remain in the run close by the food while feeding. By keeping perfectly still, the fowls will by degrees come to be quite devoid of fear; and when able to visit home in the middle of the day we have often had pullets which would stand to be stroked down like a cat, and come

crowding round like children if we stooped down to perform any trivial operation. This tame and confiding disposition not only gives a high degree of pleasure to the proprietor, but is of great advantage during exhibition, the birds not being afraid to come to the front of the pen and show themselves off. They should also be accustomed to be handled, by taking them from their perches at night, always quietly and gently however, giving a good look at them, and then putting them back again. By giving a grain or two of corn or some little delicacy after these things, most fowls may be brought to lose any dislike for being thus handled, and will stand to be taken up and put down again, even in their open runs, with the most perfect unconcern imaginable. Of course birds vary in their disposition, and those recently purchased are often painfully wild. Many people also have not time enough at home to establish such intimate relations as this, but *some* degree of mutual confidence is always possible, and should be established, between the owner and his pets.

By attending to such matters as these, and always giving a liberal supply of green food to fowls which cannot obtain any for themselves, the birds will easily be kept in fairly good condition for the time of year. But when actual exhibition is determined on, some additional and special treatment will almost always be necessary, as it is necessary to *show* fowls with rather more flesh than is proper as a permanent condition. It is well, however, to be very clear on this point. Many birds are shown so fat as to be practically ruined for all other purposes; and it is to be regretted that all ju lges do not follow the example set by one or two of the best, of disqualifying such birds, and thus checking a practice which renders practically sterile some of the "best blood" in the poultry-world. This condition is *not* what we would desire. But we have again and again urged the importance of keeping fowls in general with sharp and eager appetities, or, in plain words, *thin;* and this condition is by no means that in which they should be shown, any more than the contrary. There is a proper amount of flesh which greatly sets off a bird in point of appearance, while it is consistent with the most perfect health, and allows the fowl to go back to the breeding-pen undeteriorated: such is the condition to be aimed at. Many fowls are fatter than this already as they run in the yard; still more are fully as fat; and some may naturally ask why this last condition at least should not rather be maintained, so as to save the trouble of "getting the birds up" when wanted. The reasons are several. In the first place, birds cannot be *continuously* kept in the condition desired; it is as in *training* men or animals, and the most perfect state can be produced and maintained for a given brief period, but not beyond. Again: birds so kept, being less eager for food, would take less exercise, and hence be more subject to disease, which risk it is desirable to prevent; besides which, in attempting to maintain the condition supposed, there would be a *continual* risk of over-feeding, which is much less in a short course of special treatment, when special attention can be given to prevent it. And finally, as most of the ingredients which improve the condition of the plumage, and which would still be necessary, are also of a fattening nature, in fowls so kept there would be *no room* left for the regimen desired. On all accounts, therefore, it is far better and easier to keep the fowls only in fair stock condition of flesh, giving what care to the plumage is possible, and "wind them up" to the best condition when wanted.

We need scarcely say that the selection of the birds is very important. The most prevalent mistake amongst beginners, when they are led to suppose their birds are good enough for exhibition, is to send as *many as possible;* many and many a mistake of this kind have we made ourselves, and almost impossible do we find it even now to resist the temptation. It is some trouble to send at all to a show; and when the mind has been made up to do this, it seems hard to keep at home birds that we know are good, and fairly worth a high price. We are apt to forget that, besides a mob of chance breeders, any of whom *may* unexpectedly show specimens of commanding merit, there are probably at least half a dozen really careful breeders who will compete with us. In

simple fact, the competition at good shows is now so severe that only the *best* birds of *any* man have a reasonable probability of winning; and hence the most experienced exhibitors usually show very few, except in the cases where they enter a number of cockerels for sale. To do otherwise is to lose much money in entrance fees; and we would strongly advise the beginner to send only his best cockerel, and his best pair of pullets or hens, or of both. It may be hard to determine which these are; and it is a great advantage in this respect to put the birds into the pens we have already recommended for other reasons, where they can be *closely* scrutinised. Under such an inspection, many hitherto unforeseen faults become apparent; and it will moreover be found that those birds which appear best as they run in the yard are *not* always the best-looking when in the pen. Every extensive exhibitor uses such pens occasionally to make his final selections; and for this purpose, for the close and deliberate study of their points apart from the bustle of a show, or for preparing as already described in view of actual exhibition, there can be nothing which will be of more vital service to an amateur. The pairs of hens or pullets more especially should be scrutinised to see if they match; and we may add that matching in the heads and breasts is perhaps the most important to secure, though any great difference in the colour of other parts would be also fatal in good company. English fanciers are far more particular in this respect than American, on account of the much keener competition; and hence a first-class "matched" pair of birds is worth a large sum—perhaps four times as much as a single bird of equal quality. Thus, if a fine single pullet be worth £5, an exactly matched pair of equal merit would probably realise pretty easily £20, on account of their greater utility for show purposes.

In thus selecting birds, distinction must be drawn between faults which are nearly fatal, and others which are matters merely of comparison. Thus, a lopping comb would be fatal to a Hamburgh, and so would a white leg; but marking is simply a matter of greater or less perfection. In Spanish, a red face would be fatal; but the *extent* of the white face is matter for competition. It is of course necessary to go occasionally to such shows as are within reach, that it may be really known what quality of birds has a fair chance of winning; and it may not be advisable always to send the best specimens to a small show, where the spare birds may be good enough to win, but rather to keep them back for a more important one some time after, when the very height of condition and appearance may be needed to give any reasonable chance of success.

A very experienced breeder—no other, in fact, than Mr. F. Wragg—has often told us that he likes his favourite cockerels to be "kept well under" by larger or fiercer birds till some weeks before showing—not of course to be regularly thrashed, but sufficiently driven about to keep them always hungry for their food and intent upon it. Then, some fortnight or three weeks before showing, he would put a bird by himself with a couple of old hens, and the effect was wonderful, "making a man of him" as if by magic. He would set himself up, and learn to show himself off, and assume airs and style which no other treatment would produce. To the truth of this we can personally testify, and the hint may be useful to others.

Poultry kept in a well-shaded grass-run and good shed, and properly cared for, need only a somewhat special diet for a few weeks before the show for which they are required. The breakfast of soft food should be somewhat increased; and a moderate meal added at mid-day. Some good authorities advise toast soaked in old ale to give spirit; but this is not always safe, especially in hot weather; and we could never satisfy ourselves that any marked effect came of it, while none of the best poultry-managers that we know ever use it for this purpose, though they may now and then employ it as a remedy or restorative. A piece of cooked meat the size of a walnut, chopped up daily for each fowl, will be a far better means of accomplishing the same object. Two or three times weekly during the period of preparation, linseed should be added

to the soft food. The effect of this is sometimes extraordinary in giving lustre to the plumage; but it must not be overdone, and twice or thrice weekly is as much as is safe. The linseed is to be stewed gently in a moderate quantity of water till it forms a jelly, and with this (using seeds and all), instead of hot water, the soft food is to be mixed on the proper days; using enough of it to bring the meal to a proper friable consistency, as so often spoken of by us, and no measure of quantity being needed. A little hempseed given in the evenings instead of a portion of the grain, and a little sulphate or citrate of iron in the water, will bring out the red in the combs and wattles, and make the birds all they ought to be. Over-fattening is most carefully to be avoided, a nice, plump, handsome condition being all that is allowed; and to this end great pains should be bestowed in the feeding, the fowls never being given *quite* as much as they will eat, but allowed to leave off while some appetite is left, and particular care being taken that the crop is never distended with hard grain. Some rice, well boiled in milk, given twice during the week before exhibition, will be almost a sure preventive of purging.

Nothing further will be required in the circumstances described, except to make the fowls tame if required by occasional penning, and to see that the heads and legs are properly cleaned before sending; unless the birds should be very light in colour and require washing altogether. In cleansing the heads and legs, which should be done a day or two before sending off, the best implement is a good nail-brush, with which the parts are to be well scrubbed with soap and water till perfectly clean and bright, and then thoroughly rinsed. After this the birds are best turned into a room or pen littered with clean straw.

A very large proportion of exhibition poultry, however, are kept in small yards, and are hence in a more soiled condition to start with than those which run on fresh grass. Their shed at least should be floored with sand if convenient; but it is not always possible to do more. In this case the best plan is to provide a sufficient number of pens, resembling those used at exhibitions, but larger, in which the birds, after cleaning the heads and legs as before, can be confined for a week or two in order that the general plumage also may lose that soiled, or rather, as we might call it, dingy appearance, which birds kept in such yards generally acquire, and which can in fact only be avoided by having the *whole yard* laid in sand or fine gravel kept scrupulously clean. The proper size for these pens will be about three feet square; and if there be first of all scattered on the bottom some clean sharp grit to assist digestion, and over this some finely-cut clean chaff, the whole being scraped out and renewed every morning, the birds may be thus confined for weeks without detriment to health, and will almost daily improve in cleanliness and plumage upon a diet arranged as already hinted. Grit alone in the pens rapidly becomes dirty, and soils the plumage, while chaff only does not supply the needed material for digestion; but by combining both as we have said each object will be secured. Another plan is to turn the birds intended for show into an empty room or spare compartment, well littered with clean straw; the scratching in which for grains of wheat purposely thrown there helps in cleaning up the plumage considerably, and in the case of yellow-legged breeds has the merit of bringing out the colour of those parts as well. We should prefer this mode of treatment where possible, but when several cocks have to be shown it must be manifestly often impracticable for want of room; and the system of penning as described will do nearly, if not quite as well, whilst it has the advantage of getting the birds used to confinement. In any case, indeed, fowls not previously accustomed to it should be occasionally penned before showing, in order to get rid of that shy and frightened air which otherwise is often very evident, and greatly diminishes the chances of winning.

Of course, with fowls penned up as supposed for a fortnight or three weeks before a show, the greatest caution will be needed to avoid over-feeding. It must always be remembered that

the object is *not* to put on all the flesh possible, but simply to get the birds into *clean and brilliant condition*, adding, if needful, enough flesh, and no more, to make them "look their best." The rule of always leaving a little appetite to spare will be a pretty safe one; and by attending to it, the judicious use of linseed, hempseed, iron tonic, and a little meat, will do all that can be desired. After our many cautions on that head, we need hardly repeat that fresh green food must also be regularly given; without that all other treatment will be useless.

Such a regimen as we have described would be improper for some breeds, as Game, which require to be shown in "hard" condition. For the treatment of Game we would refer to the chapter on that breed. Hamburghs are generally kept on good grass-runs, and then require nothing beyond washing, and a little meat and iron tonic to make them lively in their appearance and brilliant about the heads and wattles. Hardness of feather is often improved materially by partly feeding the birds on small peas.

The treatment we have now spoken of will be all that is needed for breeds of dark or medium-coloured plumage; but with white or light buff fowls a thorough washing of the entire birds will be more or less frequently required, to attain the beautiful purity of colour which is essential to winning in good company. We have often seen the best pen of White Cochins at a show lose otherwise certain honours merely for want of a good washing; and while such has often provoked strong remonstrance, we must say we think the penalty perfectly right. No doubt the stress on cleanness of appearance might be carried *too* far; but as long as so considerable a number of points is given to "colour" in judging a fowl, the perfection in which that colour is presented cannot be a matter of indifference. It is in washing his birds that an amateur's difficulties and discouragements often begin. He may *know* that his fowls are the best that are likely to be sent to a show; he may have succeeded perfectly in keeping them in fine health and general condition; they may in fact be such that a professional poultry-man would almost infallibly win with them; and yet *he* may probably lose for want of experience in washing them. We were once much amused at hearing one of the most successful and "knowing" men in the fancy—one who rarely shows for his employer *now* without winning—relate his first experience, when, as a youth of eighteen, he entered a "pen of Whites" on his own account for a neighbouring show. "You would hardly believe it, sir," he said, "but I stopped up all night washing 'em, and they was as black as sweeps when they was done." We do not think any instructions will make a good washer without some practice; but it is not difficult to describe how the operation ought to be performed, and it should be practised once or twice on second-rate fowls before the most valued specimens are subjected to the risk, for a white fowl badly washed will not stand so good a chance as if not washed at all.

The great secret of good washing is to ensure the *thorough* drenching of the birds; the most frequent cause of failure being an attempt to keep the under plumage dry. The following remarks are by Mr. Elijah Smith, well known to fanciers as one of the best breeders and most successful exhibitors of White Cochins. No one could be better qualified to give instruction ont his subject, and the following is his method of proceeding:—

"Take a wash-tub ten or twelve inches deep—oval shape is the best, on account of the bird's tail; let the tub be sufficiently large to hold the bird comfortably. Then take of clean soft warm water and fill the tub (or tin) about three parts full, so that the bird when pressed down by the hand in the water will be covered over its back, up to the neck. Then take white soap, and a sponge, and rub it in the water until it is well mixed, and you have good suds; and rub the bird well with soap on all the dirty parts, and keep sponging the bird well until you can see that it is quite clean, which you will be able to see very plain when wet. Do not be afraid to rub the feathers, as it will

do them no harm, as long as you do not lay on so heavily as to break them. If the bird is rough in the water, as some that have never been washed before sometimes are, keep one hand across the bird's back and wings, by which means you will easily hold it quiet. Be sure and rub your hand well among the fluff and feathers about the breast.

"To wash the head, take it between both hands, and rub it well backward and forward, as if you were washing something in the balls of your hands. Do not be afraid of the water going into its mouth, as the soap and water will do it no harm whatever, but the contrary, as it will tend to clear it out; in fact I have often washed birds when I could not get anything else to cure them of disease, and it has answered remarkably well on many occasions.

"When you see the bird is quite clean, then take and rinse thoroughly with clean cold water: put plenty on it, until the soap is well out, for if you leave *any* soap in, the feathers will not come right in a reasonable time. When clear of soap, let them stand to drain a little, and don't be afraid of their taking cold, as the cold water prevents that by closing all the pores of the body: then press as much water off the feathers with your hand as possible, and, as I said before, don't be afraid of hurting the feathers, as they will come all right again as they begin to dry, and will begin to web again in the course of an hour. When this is done, take the bird and put it before a nice fire—not too hot, but what we should call a good fire—and keep turning them with the wet parts towards it, taking care not to have them so near as to blister their face and combs, as they soon blister after washing. When the birds are nearly dry, you may put them in baskets that have got lining in, such as we use for exhibition; and if night, you may put three or four together, if the basket is large enough for them to lie down in comfortably. By this means it will create a warm steam that will pass through the whole of the body-feathers, and cause them to web beautifully, and the bird will be quite ready for exhibition in twenty-four hours.

"If the bird is looking very ill after rinsing, keep it in motion as much as possible, by getting hold of it under the breast with one hand and lifting it up, when it will use its wings freely, and this will cause the blood to circulate; also give one or two cayenne pods, which will warm it as well. This is when you see a bird that goes black in the comb, and looks as if it would die, which heavy birds sometimes do; also handle them pretty freely, as it will do them good. Sometimes a bird will faint when put in warm water to wash; in that case I always throw cold water on it, when the bird will recover at once, and after a minute or so you may put it in again, and finish washing it without its showing any symptoms of fainting again."

Many good washers prefer to dry the fowls after washing in a cage or box of ample size, littered with clean and well-broken straw. This box is to be wired in the front and top, but closed at back and sides to prevent draught, and placed with the open front at just such a distance from an ample fire that a genial warmth may fill the box; but avoiding a scorching heat. We may add that it is *in drying* that judgment and experience are chiefly required, as too strong a heat withers up the plumage and makes it ragged, while too little causes it to hang together and appear draggled; but if the right temperature be hit upon and the soap has been thoroughly washed out, by degrees the plumage fills out, and in a few hours the birds assume their "company clothes." It is to assist this that Mr. E. Smith so strongly advises leaving the birds with a little dampness still in the plumage, the steam assisting the fresh webbing of the feathers. In summer time the cage may be put out in the sun if preferred; but the glare seems to distress the birds much, and we should prefer a fire. Some poultry-men are unusually clever in drying fowls, and by holding them near the fire and carefully removing them for a little whenever they appear distressed with the heat, manage to avoid the scorching we have spoken of, and can dry a pen of Cochins

in about two hours; but we cannot pretend to give the precise details of such management, which can only be successfully practised after great experience has been attained. As an example of what *may* be done by an adept, however, we may relate as within our own knowledge that the writer of the preceding remarks on a certain occasion received back his birds at about ten o'clock in the morning, fed them, washed them, returned them to the hampers all wet as they were, and got off with them by rail for another show at twelve; taking them out and drying them at the fire in a junction *waiting-room* on his way to the exhibition, where he again carried off the first prize!

The best hamper in which to send fowls to exhibitions is that shown in Fig. 50, or one made of skeleton wicker, in a circular form, with a cover hinged in the middle. This is to be lined with

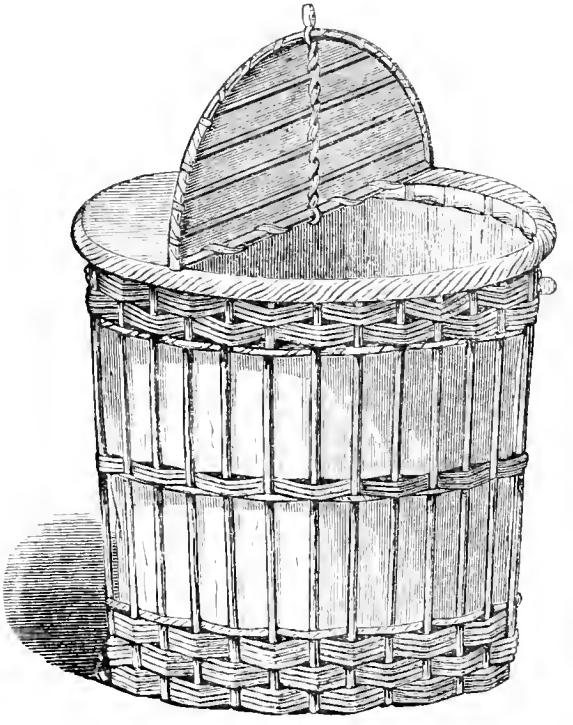


Fig. 50.

coarse linen, canvas, or some other cheap material, and the cover may be secured with a small strap and buckle, or simply tied down with string. For Brahma, Cochin, or Dorking cocks, the proper size is about twenty-two inches diameter and twenty-six inches high; and for pairs of pullets about eighteen inches each way. For other breeds the size will vary; but it is good economy to have them rather too large than too small, for fear of damage to the plumage. Geese and turkeys are generally sent in oval baskets, the size of which must depend on the judgment of the exhibitor. Some use baskets made of close wicker; but these are both heavier and more costly, and the general preference for the skeleton pattern, properly lined, is conclusive testimony to its being almost universally considered the best for such journeys as are necessary to any British show. For the longer distances of the American continent the same pattern will suffice, if an attendant accompany the fowls; and even when this is impracticable will answer well (provided the journey does not exceed thirty-six hours) if a good fresh cabbage be tied to the inside of the hamper near the top, and half a loaf on the opposite side. This is best done by passing through

each a long packing-needle, with a stout cord. The bread should be arranged with the crumb facing the inside of the basket, and be moistened with water or diluted port wine. For longer journeys it will be needful to provide an aperture, in front of which are fixed food and water-tins, with a request to the express agents, as the persons in charge are called in America, to feed and water at due intervals. In this request bread and milk, or some other soft food, should be specified, as it is very injurious and even dangerous to feed poultry on hard grain whilst travelling.

The last thing before despatch, the heads should have a final wipe over, and be "freshened up," to bring out the red, and produce that beautiful coral-like appearance which so sets off a bird in the show-pen. Most breeders use a little salad-oil for this, putting it on with a sponge, but taking care to give a very slight greasing only, and to avoid soiling the plumage. This answers well with birds off grass-runs, but is apt to produce, after a few hours, a very dull appearance in fowls from small yards. For such it is better to use vinegar, either by itself or diluted with half its bulk of water. By carefully sponging with this, the colour is usually brightened considerably. Others, again, use an ointment composed of cocoa-nut oil and turmeric. We should advise comparison, and adoption of the best of these, having found even our own experience by no means uniform; but whatever the material, all surplus should be carefully removed with a squeezed sponge. Last of all, any bent or broken body-feathers should be removed, and a last smoothing over be given with a silk handkerchief before placing the birds in the baskets for sending off. We prefer always to put the birds in their baskets at night, when it can be done in peace and quietness; and even if they do not leave till next morning, they can easily be fed in their hampers before departure.

Fowls sometimes arrive at shows very much the worse for their journey. In this case, the best thing is to administer to each a table-spoonful of port wine, and a bolus containing some such restorative spice or condiment as given at page 141. After this a moderate quantity of food and water may be allowed; and the fowls, if not too far gone, will "pick themselves up" rapidly. Sherry does not seem to suit fowls as a rule, and if we could not obtain port wine, we would substitute brandy or whisky diluted with water.

In the majority of cases birds need no treatment after returning from a show; but it is always best to feed them the first day on soft food alone, and to put them on an allowance of water. If they appear feverish, a little warm bread and ale should be given, followed by a tea-spoonful of castor-oil. If exhaustion and debility appear, some port wine, and half a thimbleful of condiment mixed in a bolus of meal, may be administered; but these are exceptional cases. A brood cock may be put back after feeding to his usual run; but we would give a special caution against returning cockerels sent to a show for the first time to their old walk with the others. If their absence has extended over three days, and often even when less, they will not again agree, but begin to fight with great determination; and as the system is often unusually excited after exhibition, this involves considerable danger — cockerels thus fighting not very unfrequently dropping down dead from apoplexy. For this reason, as we stated in our chapter on Poultry-yards, a number of spare separate pens, in which unsold cockerels can be placed alone, become highly necessary where more than a very few exhibition birds are reared.

When not overfed, some fowls will stand a wonderful amount of exhibition, especially if they can be freshened up on a grass-run in between; but birds thus continually shown require a most thorough and careful examination before each time of sending off, to see that they are really fit to go, and are not suffering from the strain. If they do appear to be sinking in any degree, it will be far better to miss the chance of another cup in order not to risk the bird, to say nothing of such a small thing (to many people) as mere humanity. We have been often sickened and disgusted—

plain words are just as well—to see noble birds make their appearance at show after show, all the time steadily sinking, until at last the once magnificent cock *cannot stand in his pen.* People who act thus are generally the reckless buyers we have already spoken of; who buy their fowls, not because they care for them, but merely to *win:* and it is, perhaps, alike difficult and needless to conceal our contempt for any one who can thus consider a living creature simply as a machine for ministering to his purse-proud vanity. This is a very different spirit to that which impels another man, who acquires, or still rather breeds, the best birds possible, because he really appreciates them; and who feels a just pride in showing these triumphs of the breeder's art, because success is felt to be *deserved.* Such a one will care first of all for his birds; he will treat them, and use them, and show them, fairly; and he will be able to give a just and hearty congratulation to any friend who can show a better pen than his own. We well remember once hearing a poultry-man, who had sold his favourite cockerel for a great sum, bitterly regret it on seeing the poor bird almost hopelessly broken down at the end of the season, and indignantly affirming that "had he known how he would have been knocked about," he would rather have given him away to a "real fancier" than have sold him to the actual purchaser for double the amount. To encourage the one spirit rather than the other is one object we have in writing these pages.

CHAPTER XIII.

SHOWS AND JUDGING.

We have seen during the past few years so much mismanagement in connection with new poultry exhibitions, arising from ignorance of the manner in which such affairs should be managed, that a few hints on the subject may not be without service. The fact that the largest and best shows in England have by degrees all settled down into very nearly the same system of management, shows that this system has by experience been proved the best; and that plain business-like simplicity of method is found in the long run better than the pet plans of any particular amateur.

Regarding the getting-up of a show, and the general composition of a Prize Schedule, we shall say scarcely anything, as the perusal of a few other schedules would impart information better than anything we could advance. When it is said that the support to be obtained in the neighbourhood, and the breeds most popular there, should be carefully studied, there is in fact little more to say; and we would only add a caution against allowing any *particularly* enthusiastic fancier to over-persuade his committee into attempting to make a "first-class" show in a neighbourhood where it is impossible to support more than a small one. We have several times known this to result in a loss of from one to as much as three hundred pounds. The fair probabilities of success are what should be considered, though there is no doubt whatever that in a central locality where there is *room for it*, and a building large enough, it is quite possible for a first-class schedule, with £500 in prizes, to pay handsomely, where a more timid one of half the amount might involve a loss. The question of cups is also worth reconsidering among committees generally; an opinion having been growing among fanciers of late, as we know from an extensive personal intercourse, that the system at present in vogue is very unsatisfactory. A lady of high rank, who had been unusually successful in prize-taking, quite lately pointed out to us her immense stand, crammed full of these useless appendages, and expressed her regret that so much useless plate should be forced upon her, adding that she had instructed her man always to take the money when the choice was offered him. No one could be more free from penuriousness of disposition than the titled lady who made this remark; but the simple fact is that the amount of money annually *wasted* in thus forcing plate upon people who do not want it is enormous. The expenses of first-class yards are very great, and money won in prizes forms quite a legitimate part of the return: but the usual system at present is, when a five or seven guinea cup is given among several classes, for the winner to lose his first prize in money (£3 at most good English shows); and we have repeatedly heard people say that "but for the honour" they would rather have had the £3 in money than the useless silver, presumed to be (though not always really so) of several pounds higher value. We have spoken to many members of committees on the matter, and there are signs of a change in this respect; but however this may be, our own decided opinion is that it would be far better to announce, in lieu of cups, a certain amount "in plate or money" as preferred, to be given in *addition* to the usual prize. A *small* cup would be equally useful for those who wished it, to perpetuate the memory of their triumphs, and the prize in money would remove what has long been a very sore point with many exhibitors; the working of the

present system being that the most successful exhibitors receive the *least* amount of money prizes, being saddled instead with plate which they do not desire. A fourth prize is also very desirable wherever possible; and when not, a "certificate" may often be made to answer for it at a small expense. The fine quality of many of the fifth or sixth prize birds at Birmingham shows conclusively the need of more than the conventional three prizes at some other exhibitions.

The form of the schedules matters little, though the increasing preference for an octavo pamphlet shape may be taken as proof of its superior convenience; but the form of the entry-papers is of some importance to easy and certain tabulation in the catalogue. Birmingham stands nearly if not quite alone in requiring a separate entry-paper for each pen of birds, a plan which formerly had some obvious advantages; but the addition of one or two columns "for secretary's use" to forms containing several entries in one table, has in our opinion given the balance of advantage to the tabular form. The following is the best form of entry we are acquainted with; it should contain ruled spaces for about a dozen pens of birds, and bear in conspicuous type the date the entries close, and any other needful particulars, besides the details at the bottom :—

ON MONDAY, JANUARY 8, THE ENTRIES CLOSE

FOR THE

GREAT INTERNATIONAL POULTRY [AND PIGEON] SHOW,

To be held January 19, 20, *and* 22, 1872.

Entrance Fee, 5s. per pen [for Poultry, and 2s. 6d. per pen for Pigeons]. Catalogues will be sent post free for Thirteen Stamps. Post-office Orders to be made payable at the [Central] Office, to the Secretary. Stamps will [not] be taken in payment [if taken add rate]. All communications to be addressed to the Secretary [add his address], and if requiring a reply must contain a stamp.

For Secretary's use only.		Class.	Breed.	Age.	Price.
Pen Number.	Label Number.				

To the Secretary of the Great International Poultry Show.

I beg to enclose Cash for Poultry Entries ... ... : :

[Extra line for Pigeons, if required.]

Catalogue and Postage (if desired)... ... ... : :

Total ... ... £ : :

The above are entered subject to the Rules and Regulations published in the Schedule of Prizes issued by the Committee of the above Show.

Signed, _____

This form contains two columns for secretary's use, in order to allow the use of *double numbers*, which are a great satisfaction to many exhibitors, as rendering *impossible* any attempt to tamper with the judges. We have known double numbers tried and abandoned on account of the time and trouble supposed to be involved; but this has been through bungling management, and adopting the tedious plan of each man who pens birds having to find for himself, by inspecting the register, the pen number from that on the label. The proper way causes no delay at all. As each entry form is received and examined by the secretary, consecutive figures are affixed in the column devoted to label numbers, and each entry is then entered in its *proper class* in a large folio book, indexed with the numbers of the classes like a ledger index, and which afterwards forms copy for the catalogue. In this large book the label number should be filled in to the right hand of the price column, a column being left blank at the left hand for the catalogue or pen numbers. As soon as any entry-form has been entered up in the catalogue-book and checked back, the labels may be filled up and sent if desired, which is a great convenience of this plan in point of time. Catalogues paid for with the entries are also to be entered in a book for the postage clerk. When the entries are finally closed and entered up, the catalogue is to be numbered consecutively throughout in the column on the *left* hand, and the whole finally checked by filling in the new or pen numbers in the column left for them in the entry forms. The last thing will now be to prepare either a single or duplicate register (according to the size of the show) of the numbers, in the following form:—

Label No.	Pen No.	Label No.	Pen No.	Label No.	Pen No.	Label No.	Pen No.
1	36	5	87	9	57	13	560
2	37	6	88	10	60	14	561
3	10	7	89	11	61	15	400
4	113	8	56	12	97	16	401

This is easily done from the catalogue, which is then at liberty for the printer; first drawing a pen through all the label numbers on the right hand, which are not intended to be printed. When the birds begin to arrive, a *numbering clerk* is to be appointed, who will be provided with a good marking pencil, a copy of the register, blank paper labels, and a paste-brush; and whose sole duty it is, as each hamper is brought in and placed before him, to ascertain from his register the catalogue number answering to the number on the label, to write that number plainly on a ticket, and stick it on the basket, which is then ready for the penning department. This plan avoids all the delay and confusion of each man who pens having to find for himself the proper number, and all risk of error from penning according to the label after all, which sometimes arises under that system, but is impossible under the one we have described, the written number being too different in appearance to be mistaken. Of course two or more numbering clerks can be employed at a large show, and this business must be only entrusted to methodical and *cool* men; book-keepers' clerks, for obvious reasons, usually making the best.

The best form of show label is one eyeletted at both ends, by each of which it can be secured to the basket. One side bears the address to the show in plain printed characters, with blanks for the numbers and mode of conveyance; the other is chiefly occupied by a blank direction for return, which is to be fully filled in by the exhibitor. The line of railway, or other conveyance by which return is to be effected, should have a special blank provided for it, to avoid mistakes and delay. The advantage of a label fastened at both ends is, that once fastened or reversed it will remain right for the journey; whereas a label only affixed at one end gives no certainty in *which direction* the birds are to go at a midway junction, unless by looking at the date, which railway porters will not always do. Many delays have been distinctly traced to this cause.

Penning should be allotted with judgment, and be also done upon system. As many porters as are needed should be employed in simply putting each basket before its proper pen. If the committee of amateurs can do the penning themselves it will be best, for people unused to fowls often handle them as if they were pigs or sheep, not forgetting to swear at them either. Gentlemen who are accustomed to the large breeds should see to *them*, and *vice versâ;* for a man who keeps Cochins is uncommonly apt to let a nimble Game Bantam slip through his fingers and fly up to the roof, to the despair of the unlucky bungler; while, on the other hand, an amateur whose experience has been in small breeds only, will be apt to ruffle very unnecessarily the Brahmas and Cochins, being unable to "get his hands round them." Method is necessary even in penning, for few who have not tried it would suppose how *very* easy it is to put the birds safely in their pens, and then—forget to shut the door!

There is, of course, a right and a wrong way of handling poultry at exhibitions. The wrong way is to catch hold by the leg, the neck, or especially the tail, by which last process we have seen many a feather successfully extracted. The right way is to take hold with *both* hands, gently but firmly, the thumbs over the shoulders of the wings, and just meeting in the middle, while the fingers go under and embrace the body and thighs. It helps matters much if the exhibition hall be darkened so that the pen numbers can only be just seen, as the fowls are then much more quiet, and easily handled.

If the pens can be arranged in single tiers only, it will add much to the attraction of the show. When double tiers are necessary, the lower one can hardly be seen for want of light; and the great Birmingham show often suffers by comparison in this respect. In many cases, where double tiers cannot be avoided, something may be done by putting the bottom rows a foot apart, and the top ones back to back; when even the six inches' projection gives a great amount of additional light from the top to the lower pens. The proper sizes of pens, as furnished us by one of the largest manufacturers, are as follows:—For turkeys or geese, three feet square; fowls and ducks, twenty-seven inches; Bantams, twenty-one inches; pigeons, eighteen inches. They can usually be hired at the rate of about one shilling per pen, including cost of carriage; but for large shows, likely to be permanent, it is often worth while to make them, and keep them on hand for future occasions.

The proper management of fowls at shows is all-important to their return in good health and condition; and we are sorry to say we have often observed treatment anything but what it ought to be in this respect. On this head we give some remarks furnished us by Mr. John Martin, so long known as poultry manager at Linton Park for the Viscountess Holmesdale, and the truth of which we have had forced upon us on many occasions:—

"May I have a word to say on the management of poultry at our exhibitions, as I have been an exhibitor at all the leading shows through the country. I must say, I think myself that when exhibitors go to the expense of sending a servant along with their birds, these should be allowed to take charge of their own poultry; for it is something shocking to see how birds are often treated. They get in the first place dreadfully knocked about by railway porters, as it is extra work for them which they don't get paid for; and at most shows the men that are engaged to look after the fowls know nothing whatever about them, and the birds are pitched into the pens in any way so that they are got out of hand.

"Birds after a long journey will drink a great quantity of water, and at most shows there is a tin full of water for them to drink their fill at. Then you will see them turn black in the comb, and put up their feathers all loose and rough, and they do not recover from this for some time, so

that when the judge comes round he passes them by as out of form; but if he could see them next day very likely they would have a better fate. Get men who understand the management of poultry, and all this would be saved.

"In the first place, on the birds arriving at the show let them have but very little water, with a small lump of the best oatmeal. The birds should be rather underfed the whole of the show than overdone. I often see food enough in the pen to last them the whole of the show. There is nothing better for the bottom of the pens than some dry grit, with some chaff over this. Let the birds be fed on meal morning and evening, with a *little* corn in the day: this last thrown amongst the chaff will give the birds amusement in looking after it, and keep them lively. The fowls require different treatment at different times of year, and some buildings where shows are held are not so well adapted for exhibitions as others: at such the birds require extra care and different treatment. At some places you will see birds, after they have been there a day or two, scouring all through the show, through the place being too long lit up with gas, and overheated: such, an experienced manager would have avoided. Other places are too cold, and the birds need different treatment; so that it would not be easy to lay down rules for feeding, &c., suitable to all shows and all seasons: but the pens should be *well* cleaned out every day, with a fresh supply of grit and chaff, the water-cans washed out clean, and supplied with clean water. The meal and corn should be of the *best* quality, and they should not be overdone with it; and if all is not eaten directly after, let it be taken away. Each pen should have a small bit of turf or a slice of mangel-wurzel put in it daily."

We can fully subscribe to these remarks, having over and over again witnessed the evil effects of the unchecked drinking here spoken of. On the evening of arrival, the water-tins for single fowls should be only one-quarter, and for pairs one-half full, and no more be given till the birds have eaten something. The meal is almost invariably mixed "clammy;" and as the easiest to mix properly friable, we can recommend a mixture of two-thirds coarse oatmeal with one-third of Indian meal. Another fault we have observed, even at first-class shows, and which needs specially to be guarded against, is the giving similar rations to all the pens. We have seen at one of the great shows of the year precisely similar lumps of dough dealt out to cocks on one side of an alley, and pairs of hens on the other; the consequence being that while the cocks had more than they would eat, the pullets had not nearly enough. Of the value of grit and chaff combined for the bottom of a pen we have already spoken; and the great importance of a little fresh vegetable food of *some* kind in all shows extending over two days can hardly be exaggerated. We would only add that the infusion of a *little* tonic bitter (such as quassia) in the water, will not only tend to prevent the fowls drinking too much, but to remedy any tendency to looseness of the digestive system.

Respecting the propriety of allowing the servants of exhibitors to pen their own birds, as Mr. Martin suggests, we fear there will be a great difference of opinion. When such permission has been given, it has often occasioned bitter complaints, caused by the suspicion of unfairness; but this no doubt has arisen partly from the unauthorised nature of the permission. Were it distinctly understood that *any* one would be allowed, under charge of some authorised person, to pen his birds and do what he liked to them on the spot, being then conducted out of the building, and not allowed to remain in it or engage in any other proceeding, we imagine few would object: but we fear the trouble of the supervision needful to satisfy other parties that no unfair advantage was taken would be practically a fatal objection; and without it any such permission would be flagrantly unjust, and has, in fact, led to notorious and serious evils. The engagement of really competent men by committees, or the doing of the work by experienced committee-men them-

selves, would solve all difficulties, and prevent the complaint which Mr. Martin makes with only too much reason.

Constant supervision of each end of every main alley has of late been too plainly proved necessary, in order to prevent injury or mutilation of successful birds by disappointed rivals. Such occurrences always damage an exhibition, though if due care be taken, it is hard to see how a committee can be blamed in such cases, which *no* care can absolutely prevent if there be the determination to indulge in such meanness. The unbridled rivalry which can lead to this and similar rascality is the greatest curse of the poultry fancy; but while it never has been and probably never can be altogether put down, we are glad to have remarked through many years that it is always confined to a wretched minority. All that can be done is to stamp upon it wherever it is found; and while we would, as a rule, prefer legal means for the protection of society, we confess we should heartily rejoice to see the scoundrel who could for mere spite pull out the tail of a brother fancier's bird, if caught in the act, receive any amount of "lynching" in the exhibition hall which did not involve actual personal injury.

Regular removal and breakage of eggs laid during a show is of the greatest importance. If left in the pens, breakage is sure to occur, and the birds thus acquire the habit of egg-eating. Speaking for ourselves, we would rather even have valuable eggs stolen than this should happen; but neither should be possible in a well-conducted show.

The manner in which the awards are stated in the catalogue is of considerable importance to the pleasure and comfort of visitors. The best plan of all is to have them in the left-hand margin of the page, to the left of the pen numbers; and if properly managed this plan is also the simplest and least troublesome. The printers should be directed to get up the catalogue with a "three-em quad" (a space known to them) at the beginning of every line, and to set up the various awards, abbreviated thus—1st. & cup, 1st, 2nd, 3rd, H-com., and Com.—to this measure or width, *before* the awards are made. Then as the various instalments of the awards are forwarded (which they should be at frequent intervals) to the printing-office, the "quadrat" is withdrawn and the award dropped in its place, and the whole may thus be ready for press almost as soon as the judges have done. The next best plan is to publish at the end a list *in full* of the prizes in each class, which is the method in vogue in Birmingham; and the worst of all, perfectly disgusting in the trouble it gives, is to publish separately, and loosely slipped in the catalogue, a mere list of the pen numbers which have taken the prizes.

One catalogue should be kept exclusively to mark off pens sold, as well as entering them in the sales book. Claiming pens entered below their value formerly occasioned much ill-feeling, when, as nearly always happened, several wanted them. This difficulty was obviated at Birmingham, and afterwards at several other shows, by putting all the prize pens up to auction, and dividing the excess over the catalogue price between the exhibition and the exhibitors. This expedient answers perfectly at the largest shows, but not at the smaller, for want of competition to pay its expenses; but we may point out that all the advantages of it may be secured by a simple rule, providing that if after the sales office be opened more persons than one claim a pen simultaneously, it shall be sold to the one who will give the most for it, biddings being unrestricted, and excess divided as on the other plan. In this way delay over the many prize pens which are not wanted, and the expenses of a sale, are avoided, while the additional price over any great bargain is equally secured. But however this matter may be managed, *notice* of all sales made during any day should be dispatched to the exhibitor of the pen by the night's post. Neglect of this occasions needless anxiety when the sold pens fail to arrive along with the others at the close of the exhibition.

The last feed of corn before the show closes should be scantier than usual, and the last feed of

all consist of meal dough, corn being, as we have said before, quite unfit for birds going a journey. Packing will then proceed as quickly as possible, the most convenient means of fastening down the hamper covers being either a *long* packing-needle and good string, or straight pieces of annealed soft iron or copper wire, about ten inches long, which are easily passed through basket and cover, and then fastened by twisting the ends together.

Poultry-men are always anxious to get away with their birds the same night the show closes. This is often very unnecessarily objected to by committees, as a little management will generally allow of it without either danger or difficulty, while too elaborate a "system" will make it impossible. A cheque-book should be prepared, as simple as possible, something like the following:—

No. 23. *Jan.* 22, 1872.

Mr. .....

Address, ...

Pens, ...

.....

.....

No. 23. *Jan.* 22, 1872.

Allow Bearer to pass with Pens No .....

.....

.....

.....

(*Signed*) .....

Secretary.

Then supposing the show closes at nine o'clock; from eight to nine those wishing to leave should obtain their forms duly filled up and signed. Sales rarely take place so late, and the counterfoil will enable any that *may* be effected to be "stopped" at the door. The catalogue will have at the end an index of all names, with list of all the pens entered by each exhibitor; and by referring to the sales catalogue to see if any of these have been sold, and adding at pleasure any pens bought (many secretaries insist on sending *all* "sold" pens by rail), each form is quickly completed. Then the first half-hour or hour may be devoted to getting these orders packed in regular rotation by the packers, and afterwards handed to the owner's representative; the packer calling out the number of the pass, when the man to whom it belongs will claim it and his hampers, and no other baskets being sent out of the hall till all the men who mean to take their birds with them have been dismissed. The door-keeper will see that no man takes out more than the pens on his order, and in this way all necessary objects are accomplished with little trouble to any one concerned To allow any persons to pack their own birds, however, is not wise; as several instances have been known to occur of individuals packing birds *not their own*, the most distant risk of which should be avoided.

The remaining birds will then be packed and dispatched as speedily as possible, any which may unfortunately die during exhibition being *returned* for the inspection and satisfaction of the owners. Care and method are again needed to avoid mistakes, which are a disgrace and future injury to any exhibition where they occur. Should death or loss occur through proved neglect of a railway company, recent decisions have established that the company is liable, *notwithstanding any printed announcement* that they decline such responsibility, unless the sender has *signed* a document exempting them from such liability. For instance, so lately as July, 1872, a Mr. Yardley sued the London and North-Western Railway Company for £10, the catalogue value of a pair of pigeons on their line. The Company pleaded that by a printed regulation they declined responsibility beyond a few shillings value, unless such value were declared and insurance paid

on it. But counsel for the plaintiff showed conclusively that by the "Railway and Canal Traffic Act" (17 & 18 Vict., cap. 31) such liability continued to attach to the company, any disclaimer notwithstanding,* unless by special contract *signed* by the sender they had been exempted. It was also held that fancy value should fairly be taken into consideration, but not to an exorbitant extent; and in this particular case the sum was assessed at £4. Our own impression is that for poultry damages might be recovered to the extent of about £5 each for valuable birds, but not beyond; and that in most cases, after the foregoing decision, no company would dispute such a demand, though they might refuse one for a larger sum.

That all prize money should be paid, and other outstanding liabilities of any show should be settled promptly after closing, is so obvious as scarcely to need remark. Even the great Birmingham show only requires a month for these purposes, and in most cases a fortnight should be amply sufficient. Punctuality in this matter has a great influence on the confidence of exhibitors for the next occasion.

And now we come to consider JUDGING—that crucial proceeding at every show, upon which so many anxieties and hopes depend. That good judging must be more than anything essential to the healthy condition of the poultry fancy, is so self-evident as almost to be a truism. Almost *everything* depends upon it, for let there once arise a well-founded conviction that judging is not at least fair and impartial, and the whole system must rapidly come to an end. That it does not, but that shows multiply in number and increase their entries on every hand, is conclusive proof that, on the whole, the judges chiefly employed deserve the confidence reposed in them by exhibitors. Mistakes *cannot* of course be always avoided, and we have ever found the most honoured judges in England the most ready to acknowledge such if fairly and courteously pointed out. Considering the hours of special study it sometimes requires for an amateur to decide which is the best of even his own birds, which he has himself reared from the shell, it is simply impossible that judges should in one day decide absolutely without error amongst such heavy classes as are now frequently subjected to their awards. The "ordinary run" of birds are often now superior to those which took prizes in the early days of the poultry fancy, and the difficulty of deciding between them is proportionately increased. When, therefore, an outcry is raised for "correct awards," if it is meant that *every* award is to be beyond challenge, the demand is simply impossible of satisfaction: no system and no judges can ever satisfy it. What may be demanded are, the strictest integrity, the highest ability, recognised principles of arbitration, and fair time to bring these to bear; and it is in relation to these that our few remarks will be directed.

In regard to integrity, we have already remarked that the confidence which, as years pass on, continues to be reposed in the most valued English judges, is a very simple proof of character beyond corruption. We may add that we have taken the trouble to investigate personally some half-dozen definite charges against judges of repute, and we not only found in every case that they were utterly without foundation, but that in several cases the general conduct of the complainants would not bear examination. We have seen scores of times beginners in the fancy, who happened luckily to possess birds good enough, wrest the prizes of the year from all those veteran exhibitors who have been supposed to "rig the market" with the judges so effectually. Should it ever be

* The words of the Act are, "Notwithstanding any notice, condition, or declaration made and given by such company contrary thereto, or in anywise limiting such liability, every such notice, condition, or declaration being *hereby declared null and void;*" though special contracts, signed by the sender, are expressly admitted.

In another case, decided in the Court of Common Pleas, in May, 1872, Mr. South recovered £20 from the Lancashire and Yorkshire Railway Company, for the death of five pigeons caused by delay on that Company's line.

otherwise—and when men of no character have been employed we have known cases of grave suspicion—we would only remark that the fair and honest course is to make specific charges before the proper authority concerned, and not to make reckless insinuations which can neither be examined nor confuted. It is not from *judges* of doubtful integrity that the greatest dangers to the poultry fancy are likely to arise, but rather from the reckless and debasing rivalry which, without either honesty or courage, seeks to *win* as the sole object of keeping fowls, and sticks at no means to compass this paltry end.

The combination of qualities required to make a good judge is very rare. Few men know *many* breeds *well;* and the difficulty of passing from one breed to another without the eye becoming biassed is very great to a beginner. The judge must have at least a competent knowledge of the classes he takes, both in their merits and their ordinary defects, from a show standard. He must be cool, and yet quick of eye; patient and deliberate, and yet decisive and able to make up his mind; have an opinion of his own, and yet not be crochetty or fanciful; be honest himself, and yet have a keen eye for the villanies of others. He ought, too, to be able properly to consider the *circumstances of the day.* This is a point little thought of by exhibitors, who seem to expect that decisions should always be alike; but consideration of it would explain many otherwise puzzling decisions, and can never be omitted by a good judge. To put this matter plainly, it may be necessary to judge *differently* according to the *different faults* prevalent at the time; and we are not sure, when the time comes for a final review of the work done by such judges as Mr. Hewitt or Mr. Teebay, and for comparing fowls and the fancy as they may leave them with the standard of both when they began, that a large part of that work will not have to be credited to a judicious consideration of this point. For instance, supposing the case of a Cochin slightly vulture-hocked, but of marked merit otherwise. The proper standard of perfection no one doubts; but if nearly bare legs were almost universal through too great a fear of the hock, such a bird as we suppose might with advantage have first prize, supposing him better than the rest in other respects; whereas if vulture-hocks were becoming commonly shown, it might be equally desirable to pass him over, or only give him third or fourth place, in order to discourage the popular fault. Other illustrations will readily occur to the reader.

It will follow from the preceding paragraph that we are no advocates for judging "book in hand;" and we think American fanciers especially have somewhat misunderstood the place of a "Standard of Excellence" in this respect. We were once much amused by reading how at a particular show in the United States, or Canada—we forget which—the judges were two days with their book before they could decide in a particular class; and we cannot help saying that we would not have given much for their decision when the heavy task was done. The fault of all book-judging—independent of time—is that it is not *elastic* enough, and can make no *allowances* either for such things as we have just adverted to or many others; in fact the "eye" of a thoroughly experienced judge is worth all the "Standards" in the world. Again, when we see it coolly argued that the judges should "add up the points" of the various pens, we cannot help reflecting how many weeks it would take to judge a large show honestly on such a system, besides which, some decisions would after all be evidently wrong when they were made; for we have repeatedly had occasion to notice that birds which would have been clearly first according to the "Standard" were by no means the best in their class. The "points" put them first, but somehow *no one liked them.* Better scales of these may certainly be arranged, but it is at least a matter of doubt whether an infallible "Standard"—which shall correctly deal with *every* case—can be devised; so subtle and intangible are some of the features which at once mark off a first-class bird from all its compeers, and which can be "felt" or seen much easier than they can be put upon paper.

Nevertheless, a correct "Standard of Excellence" may be of the highest use. It may on occasions *help* even a veteran judge; it may be of incalculable assistance to the inexperienced, and by study and patience *train* a good judge; it may maintain the fixed canons of a breed, and show the amateur what he has to aim at; it can tell him exactly the real quality of his birds, and almost exactly his *fair chance* of winning; and it can at least prevent the amateur public from being misled into breeding wrong through any glaring error in judging. Even the English "Standard" published by the quondam "Poultry Club" has done great good in this respect; and, after all that has been said against it, furnishes a useful basis for a more perfect system of judging. It might have done still more, but that the self-constituted body by whom it was issued never possessed the confidence of the poultry public, and that the editor did not manifest sufficient power of seizing the actual and *comparative* value of different features to guard against error, and ensure giving due weight to the various points, on which its value would obviously depend. Hence this "Standard" was no sooner published than the best judges in England openly refused to be bound by it; being, as it was, rather prepared by one or two individuals, stating what in their opinion *ought* to be the comparative value of various points, than upon the only sound basis, of endeavouring by *careful comparison of actual decisions* to tabulate the weight really given to them by the best authorities. The last is the only means of establishing a reliable standard of judging, and will form the basis of our own tables for the various breeds. While not omitting the old tables, for the sake of comparison, we shall in fact try to show how fowls *are* judged, according to the best decisions at English shows, not how any individual thinks they *ought* to be. If we are charged with presumption in thus giving merely personal views, we reply, in the first place, that the existing "Standard," with all its assumption, had no real claim to be anything more; and further, that our only pretension is the endeavour by careful comparison and analysis, aided by the most eminent fanciers, *actually to embody actual decisions;* while we do not, like our predecessors, assume without warrant *more* than personal authority, or claim for any scale of our own more weight than its accuracy shall prove it really to deserve. That a far greater number of fanciers have assisted in the preparation of or have revised the tables we shall give than have been ever consulted over any previous scales of points, we can safely affirm; and the almost literal adoption of our only hitherto published scale by the great body of American breeders, as may be seen from our chapter on Brahmas, may serve to prove at least the superiority of the more unassuming method we have pursued, of endeavouring by patient analysis to deduce conclusions from the actual work of our best judges, over the empirical and really far more pretentious plan of one or two individuals giving under a *false* mask of "authority" what were really only their own views.

We still think, therefore, that the eye and judgment of the best judges will and must continue to be the final authority at poultry shows; using "Standards," as the name implies, chiefly as permanent canons to which, if correct, it may be expected that awards will in the main conform, and especially not expecting that a book, however perfect, can enable *anybody* to judge fowls, as seems by some in both hemispheres to have been expected.

Nothing, then, can ever make a judge's task an easy one; and it is not too much to ask that whatever may lighten the heavy burden of his responsibility shall be scrupulously studied. This may be done in many ways. Except in very small shows, a whole clear day should be allotted for the task; and when the public are admitted, as is the practice at some large shows, care should be taken that they are at least rigorously excluded from the alleys where judging is actually going on. It is impossible to judge calmly in a crowd. The birds should be rather *sparingly* fed before judging begins, especially in the Game classes, or handling them will be of little assistance. The task should be begun with daylight, one or two steady men being in attendance, if possible, to

take birds from their pens, and to weigh them if required. Judges can of course take out fowls for themselves; but the withdrawal of a lot of Game fowls is arm-aching work, which may just as well be saved, leaving only the actual handling of the birds to the gentlemen who have to decide upon them. It is better and gives more satisfaction if such assistants are *paid* men who can handle fowls, and if no members of the committee, unless non-exhibitors, and especially no poultrymen or other interested parties, are allowed in the hall with the judges at all. We have already said we think there is little real danger of corruption; but "people will talk," and a judge, like Cæsar's wife, should be above even suspicion. Refreshment of some sort will generally be necessary before the work is over, and we would remark emphatically that it is far better to allow half-an-hour's *rest* than to partake of it "anyhow"—a little real repose in a chair will do wonders, and the time is by no means lost even as regards the closing of the task.

For the following remarks on judging we are indebted to one of the most experienced and valued judges in England, Mr. Richard Teebay:—

"With regard to judging poultry, it is a very great mistake for more than two judges to go together. With two judges, by far the best plan is for one to begin at the beginning of the class, and the other at the end, marking their books as they go through the class, and then compare the books, which will (if both are experienced judges) be often marked so much alike as to settle the prizes without further examination of the birds; though they may in strong classes have to look over them again to settle the highly-commended and commended pens. It generally happens that where there are four prizes in a class the fourth prize will give the judges more trouble to decide on than the other three; in fact, the third and fourth prizes take very far more—at least double the time in awarding them that the first or second prizes do.

"With regard to the time generally allotted for judging at poultry exhibitions, if the rules were *strictly adhered to* as to the time the birds are to be ready for the judges, and the judges' books are properly made out in time, the time for judging would generally be amply sufficient; but at nearly every English show, where birds are allowed to be taken in in the morning, at least two hours is generally taken up from the time the judges were to begin. Then again, at more than half the English shows the judges' books are either not finished or in some other way delayed, so that more time is again lost: in either of the above cases the judges waiting, perhaps in no pleasant humour, to begin. It is remarkable that delays from either of the above causes very rarely occur in Scotland.

"It may be said that judges have a great deal larger number of pens to go through than formerly; but, on the other hand, there is a great difference betwixt judging single birds or pairs of hens, than what it used to be when a pen consisted of a cock and two hens, which at many shows used to be put into such miserably small pens that the judge had to turn every bird about in the pen before he could see those behind.

"The pattern known as the '*Field* Judging-books' are a great boon to judges, and secretaries also: the plan was first tried at Whitehaven, but the books on that occasion were far too wide, large, and cumbersome. The plan saves the judge's voice (where cocks are crowing you cannot speak in your ordinary voice) and time in giving in his awards. I cannot for the life of me see why secretaries cannot have the judges' books ready in time; but they appear to be the very last things often thought of, while they might be made out as soon as the entries close."

Generally speaking, there are not *enough* judges. We have gradually acquired the conviction that no one can *properly* judge more than from 400 to 500 pens in one day, according to the

character of the competition, and that to give heavier work is unjust alike to the judges and the exhibitors. Two judges, if acting together, would require as much time; but our own opinion has long been that the best plan of all is to employ *single* judges, each being responsible for his own awards, and having no more than he can accomplish with credit and success. We have noticed many shows, and have almost always observed that individual judges, *if not overworked*, gave the most satisfaction by their awards. Thus, we have known a show of nearly 900 entries judged by two gentlemen in concert, a task far too heavy for the one day allowed; whereas had each taken 450 pens, the work would have been done with promptitude and ease. A judge can always call in his colleague to advise in any case of difficulty; but by putting the real *responsibility* for every award on some one person's shoulders, we believe the greatest likelihood is secured of attaining all that character and ability can give to the task; while if only a fair amount of work be given them, most judges prefer this method, *after trial*. We say after trial, because we have known several who strongly objected beforehand to undivided responsibility, who afterwards were as strongly in favour of the plan we advocate. If one judge finally checks over the awards of his colleague, remarking on any which to him appear erroneous, there will be little risk of any escaping detection. Judging, however, is a thankless task at best. If *all* his awards are correct, the judge has only done his duty; if not, he often reaps abuse in no measured terms. The least, then, that gentlemen who act in this capacity have a right to expect is that time and quiet be given them to perform their task with due deliberation and care. This is by no means the universal rule, however, as we have just seen; and the neglect of it is the cause of many awards for which the judges are unjustly blamed. The way in which such matters are more usually managed, and his views on the whole subject, are well put in the following remarks by Mr. Edward Hewitt, the celebrated English judge, who has officiated at far more shows than any other individual, and who has in fact devoted almost the whole of his time for many years, *gratuitously*, to the service of amateurs in this manner:—

"I can endorse to the very echo the remarks of Mr. Teebay as to the arrangements most eligible in the appointment of judges to their customary duties. It is at agricultural shows more especially it so frequently happens, that though the poultry judge (or judges) have twenty-fold the number of decisions to return that are required in any other division of the show, the poultry-tent arrangements are the last completed of any; and thus these awards are commenced, from lack of punctuality in getting the judging-books completed, the very last of any on the show-ground. It is in such cases the efficiency of the arbitrator becomes developed; or, on the other hand, his comparative unsuitability for the manifold duties of office is as painfully manifested. Limited time, coupled with the exigency of getting done by the hour for opening, brings into the strongest light these contradictions. If at such an unexpected juncture the colleague of even an efficient judge proves simply a drag-chain on his own personal exertions, and relapses into anxiety, hesitation, and uncertainty, the trial of the able arbitrator is proportionately increased—far better at such a time would it be to act alone and on individual responsibility.

"I quite agree with judges having their appointed classes, and a sufficiency of arbitrators engaged to finish their own awards with comfort to themselves, and in time for publication in the printed catalogue. When thus allotted, no doubt each arbitrator will exercise especial care as to those classes exclusively assigned him; but putting *more* than two judges together considerably retards, rather than promotes, active decisions, and not less frequently brings with it erroneous ones. But quite the most urgent objection made by committees rests entirely with the increased

expense of engaging many arbitrators; as even in my own case, when requiring repayment simply of travelling expenses and bed, the cases are numerous where inability to pay even this slight amount is stated to arise from there being "no funds to fall back upon this year," on account of the miserably unfortunate weather, or some other like contingency. I have many such instances on hand, and do not myself see the way to improvement from any increased outlay by the managers of such meetings.

"It is to be borne in mind I quite approve of a colleague, and think it decidedly best for each pair of judges to be answerable for their own decisions; but I may confidently ask, where did it ever occur that *more* than two judges acting together did the work as promptly, or with improved accuracy of awards?

"I cannot recommend more strongly than deserved the advantages of the so-called '*Field* Judging-books,' the principle of which, I may however add, I first enjoyed under the *written* award-books of Messrs. Jennison, of the Belle Vue Manchester show, some time previous to their introduction at Whitehaven, or being issued in a printed form from the *Field* office. In short, these books, by the aid of duplicate numbers, check themselves; ensure accuracy of the returns made; save much talking; and, what is of still more value, save time."

When time is short, the *quickest* way of judging is, in a preliminary walk through the class, to mark off all pens possessing no particular claims to notice, and then more deliberately to consider the rest; but the *best* plan is, as described by Mr. Teebay, to attach marks to the more deserving pens, deciding their rank by degrees. In doubtful cases the scales may help to decide, but as a rule the less these arbiters are used the better, though a good pair should always be at the service of the arbitrators. Judging-books should consist of numbers only, the headings of the classes and particulars as to cups, &c., being placed in proper positions. The pattern mentioned above, and sold as the *Field* books—though they were in use, as noted by both the able judges just quoted, long before thought of or issued from the *Field* office—are simply duplicate columns for such numbers, and also for the awards, with a perforation between for tearing one set off and handing to the committee, and space at the top for any needful particulars as to classes and other matters. They are still better prepared with rather narrower columns in *triplicate*, and perforated, when one set can be kept by the judge, one by the committee for reference and putting on prize cards, and the third sent at once to the printer without the delay of copying. It much facilitates the "carding" business if some proofs of the catalogue in slip are provided, on which the awards can be copied in the margin, to serve as guides to those who perform this duty, which should always go on as fast as the awards are delivered.

Besides deciding on the ordinary merits of the fowls, judges have to keep an eye upon attempts to deceive in the shape of fraudulent "trimming." No one would wish to be hypercritical in these matters, and we would neither shrink ourselves nor seek to debar any one else from extracting any *stray* broken, bent, or foul feather which, left in, would disfigure an otherwise beautiful bird. Some have professed to be unable to see any line of demarcation between such and actual fraud; but common sense and common honesty will draw such easily. To remove an accidental blemish is not fraud; to remove so much as to *alter the character* of a bird, is fraud, and against all such attempts judges have to be constantly on their guard. The modes of fraud are legion. Yellow legs are imparted by tincture of iodine; this is best tested with starch. The legs of Game and some other fowls are sometimes *varnished* to give them the proper appearance; this can *generally* be detected by strong spirits. Feathers are also dyed, which can very often be detected, on suspicion, by a white handkerchief slightly moistened. The frauds most difficult of detection

consist in the pulling out of feathers; which is very hard to establish in some cases, such as the breasts of Hamburghs, though comparatively easy in others, such as abstracted vulture-hocks. The most cruel fraud practised is the sewing-up of, or insertion of needles or pins in combs, to hide defects, which we are sorry to say has been detected on several occasions. Other devices almost challenge admiration for their ingenuity; and against the insertion of false *sickles* in particular the judge of Hamburghs and Bantams has especially to be on his guard, a good tail in these breeds being of special importance in competition. Such a tail as is shown in our plate of Silver-pencilled Hamburghs, for instance, would cause a bird to win almost anywhere if pretty good otherwise; and accordingly, more than one Hamburgh breeder, even when his best birds are dead, *keeps their sickles* "for use as required." The old plan was to cut the faulty feathers down to about an inch long, and to affix the new ones with thread, or perhaps cobbler's wax; but such bungling as this would be laughed at now. The stump is cut down as before to a proper length, but the tube is cleaned out, the end of the "show" feather inserted, and fixed in with a strong transparent cement varnish, or otherwise, so as almost to defy detection. That it does in fact often escape punishment may be seen from the following, extracted from a racy address on poultry delivered to an agricultural meeting. We change names, and even initials, in order to prevent identification, and remove any objection to now republishing the painful details:—

"A clever case of trimming was exposed at a poultry-show last winter. In this county there are two great rival poultry-keepers, more particularly rivals in Hamburgh breeding—Mr. X and Mr. Y. X generally takes the first rank, but last year Y almost invariably distanced his rival in Silver-pencilled Hamburghs. According to the 'Standard of Excellenc
feathers of the cock's tail in this breed must be black, or very dark, with a fine edging of white, and in this particular the superiority of Y's birds was conspicuous; and at the show in question they were awarded the first prize. X has a poultry-man named Z, and Z was of course put out at his ill luck, and stood ruminating before Y's prize pen. 'His birds are not so good as ours if it wasn't for their sickles, but they're stunning sickles, certainly. I can't make it out how he manages to get them.' Gaining the consent of the attendant, Z contrived to get hold of the bird with the wonderful sickles, and on blowing into the roots of the tail-feathers, lo! the murder was out. 'Well, I'm blow'd!' said Z; 'fetch Mr. H.' Mr. H, who was the judge of the poultry at the show, was soon on the spot, when Z pointed out to him how the natural sickle-feathers of the bird had been cut down to the quill, and the beautiful artificial sickles neatly fitted into their place. Mr. H immediately cut off the borrowed plumes, and gibbeted Mr. Y by affixing a notice to the front of the pen, fully describing the fraudulent transaction."

Our opinions on this subject have long been known. Concerning such frauds as are never discovered nothing need be said; but in every case of fraud actually detected, unflinching exposure is due to all honest exhibitors. We are sorry to have to add that most committees appear indifferent about the matter, and, in many cases where the judges have fearlessly done *their* duty by handing in their certificates of the imposture, have either neglected, or point-blank refused, to place the deserved and ignominious inscription of "Disqualified for fraud" upon the pen. Such moral cowardice trenches on the very verge of complicity; and we confess that our greatest fears for the future of the poultry-fancy lie in this marked unwillingness of the managers of many shows to strengthen the hands of the judges in sternly stamping out as much as *can* be discovered of this dishonest trickery. If a rule were generally adopted to disqualify at a show *all* the pens of any exhibitor found guilty of fraud, affixing to all such, and sternly *maintaining from obliteration*,

some such notice as, "Disqualified on account of fraud in Pen —," we should have a check on these practices which, though not total, would be very generally effective; and every honest amateur should join in pressing this upon show committees. It is *they* who now shrink from their duty; and one of the best judges we have has gone so far as publicly to complain of the supineness of these bodies in cases actually discovered and exposed by his exertions. We have long ceased to hope for anything Utopian, and we ask for nothing unreasonable now; but it is not too much, surely, to demand that when fraud *is* detected by the vigilance of the judges, some penalty should be enforced by those who are answerable for the conduct of a show. How far this is the case, the following statement, for which we have again to thank Mr. Hewitt, will make plain; while it will show conclusively that the language we have employed respecting the neglect of their plain duty by many committees is by no means too strong:—

"After the issue by committees of the customary printed rules against 'trimming,' and which are usually expressed in language so simple, uniform, and stringent, it might fairly be anticipated that where the judges have, in unpleasant fulfilment of their positive duty, disqualified pens for gross violation of the rules thus set forth, the arbitrators might at least confidently rely on the concurrence of the committee themselves in support of the decisions—the positive proof lying exclusively with the judges. As experience proves, this ofttimes is directly contrary to the fact: the committee do not consider their position even then as being obligatory; they shrink from their duty, and thus the disqualification is after all not enforced, or even publicly exposed.

"Not long since, at one of the largest shows in the kingdom, my colleagues and myself disqualified nearly one-third of the entries in a large class for Dark Brahma pullets, and these disqualifications were duly announced by us, and recorded by the committee, at the time of giving in the awards. No note whatever was made of any of them in the printed prize list, nor by posting "disqualified cards" on the pens, although our especial attention had been, previously to judging, directed by the committee to the rule against trimming, and an hour of valuable daylight actually lost in the discovery and record of these malpractices. When asked the reason of this omission, it was coolly stated, 'that the committee had just held a meeting on the subject, and it was resolved not to make it public, as it might injure future shows'—adding they found 'it would be far more sensible to bring forward some more modest proposal, than to commit themselves to so *large* and impracticable a scheme.' A curious incident here followed worth naming. A gentleman well-known for his fixed opposition to 'trimming,' in reporting on this very class, stated the best pen of pullets was unnoticed; a remark in which he was fully justified, as these birds were the most cleverly though grossly trimmed in the hock-feathers (of *both* pullets) the judges had ever seen, but so well carried out as to be not apparent in the show-pen.

"I am quite aware that by some persons the opinion is entertained that if offenders as to trimming are dealt with too severely, it might estrange many amateurs who proposed exhibiting from entering on the pursuit; but my own fixed impression is simply this, that if committees would be at the trouble of making a few unflinching examples of offenders, the raids of these 'trimmers' on the prize lists would no doubt be at the least very considerably controlled, if not held in check altogether.

"I have always been averse (as now) to 'trimming,' as being injurious to the just rights of strictly conscientious exhibitors, and was myself the first party who publicly wrote against trimming. Having narrowly watched its progress, I can say its advance towards perfection is far greater than most persons accredit. Omitting the question of dyed plumage, pins in combs, and many other schemes that trimming gives rise to, I easily call to mind the very crude attempt

at imposition made some years back of sticking on a Bantam's tail with cobbler's wax: but very recently was shown a Game cock, with one of the sickle-feathers so dextrously 'imped' on as to be only discoverable (even in a perfect light) after the closest scrutiny; although in perfect candour I was previously told *one* of these feathers had been subjected to this treatment. In practised hands, it is really wonderful what can be done with the 'imping-needle,' as it supersedes quick-drying varnish altogether. Several feathers from the wing of a trained falcon were as an illustration submitted to my inspection, that had been naturally '*moulted*' after *some months of actual hard wear during flight since they were 'imped;'* and yet the point of juncture even when handled remained as firm, and I had almost written as invisible, as when first replaced. As to trimmers and their suppression, my sympathy with *half*-measures is very slight, and I confidently suggest that rules should be either faithfully enforced, or expunged altogether from the printed regulations."

Being personally referred to in the foregoing paper, we may say that we perfectly remember the case mentioned by Mr. Hewitt, and making the remark stated by him in the course of a lengthy and very detailed report of the show in question, undertaken by us at the special request of the editors of the leading English poultry journal. We may add that at a later period—unfortunately *too* late for any correction—we were convinced beyond question by another of the judges who had officiated in that class of the gross fraud that had been perpetrated, which could not possibly have been discovered without actually withdrawing the birds for examination; and we are justified in asking by what term should be designated the conduct of those who thus deliberately refused to protect the interests of honest exhibitors? We have been amused at the persistence with which it has been attempted to get rid of this vital matter by urging the "impossibility of detecting" every case. This is not the question—no man is responsible for not doing what cannot be done! But when fraud *has been* detected—what then? That is the point; and committees who wish to avoid the charge of direct complicity with swindling would do well to study it. One of the committee of the show here referred to, in reply to private remonstrance from ourselves on the injury done to honest exhibitors by such wilful neglect of duty, made use of an argument which we have found curiously common in such cases; viz., that "as the guilty party had taken no prize with the trimmed birds, no injury had arisen." This is specious, but none the less false, as will be readily seen: for if duly punished, the fraudulent trimmer would probably be deterred from repeating his fraud, to the protection of the honest amateur; whereas by such disgraceful impunity he is emboldened to renew his attempt on another occasion, when he may *not* be discovered as in this case; and for the injury *then* done the committee which has neglected any deterrent measures cannot be held guiltless.

Owing to the interest we have long taken in this question, we have been so often asked what practicable measures can be adopted, that we venture to frame a rule against the practice which can give no difficulty in working; which gives to the judge his proper responsibility, and to the committee theirs; and which if carried out honestly would, as we have been assured by *many known trimmers themselves*, almost eradicate this evil. The last statement may astonish many, but it is simple fact! Several of the most frequent offenders in this way affirm that they are in a measure *driven* to it by the keen and unprincipled competition that prevails, and that if they could only be assured *all* would be sternly dealt with on discovery, no one would rejoice at the new state of things more than themselves. Being known, strong as our opinions on this matter are, never to "break confidence," the number of private confessions thus poured into our ears has been astounding, and the social position of some thus compromised few

would believe. One such was a *clergyman;* and another—a justice of the peace (!)—openly urged that, while he would be rejoiced if it could be stopped, he "*did* think there could be little or no harm" in doing what he affirmed "all committees openly recognised and winked at." These things are *facts;* and trusting that the statement of them may lead to a better state of things, the following is a rule which we would suggest, to be inserted in schedules, and carried out with temper, but with firmness, on all occasions. We may add that the eminent judge already quoted has pronounced the penalty here proposed to be "A 1" for its intended purpose, and we venture to say that if it be carried out fairly, we shall hear comparatively little more of trimming:—

"The judges will be specially instructed to disqualify and mark any pens of birds which they may discover to be fraudulently trimmed or altered in character for the purposes of exhibition. In case of any such disqualification duly certified under the hand of the judges to the committee, *all* the pens of the same exhibitor throughout the show will be also disqualified on account of such fraud; and both the penalty and the reasons for it will be stated in the prize list, and notice thereof legibly affixed to the front of the said pens. These notices will be maintained on the pens throughout the show, and any one found removing or defacing them will be given into the custody of the police."

Since the foregoing matter has been arranged for press, we have received from Mr. Hewitt a third most valuable paper on various points connected with the management of shows and the other subjects of this chapter, which we place before our readers with peculiar pleasure, as showing how closely our own recommendations coincide with the matured and deliberate conclusions of that veteran fancier and judge. The agreement is in truth remarkable, of which a curious proof may be given. On receiving from Mr. Hewitt the gratifying announcement that such a statement of the results of his vast experience should be sent us if we desired, we thought it well to forward for his perusal, along with our note of acknowledgment, proof sheets of the preceding pages; but in the meantime he had written his own MS. independently, and the package arrived by post while it was lying, completed, on the table. In a private note accompanying his MS. he states this, and adds, "My wife, self, and two gentlemen who happened to call in for the evening, had a hearty laugh at the apparent impossibility of any two minds writing so perfectly in unison on any subject, unknown to each other; and, as one of them justly observed, 'we must certainly be *getting very close to the truth* to do so.' As your printed copy and my *already written* article lay side by side, nobody but some one who saw your package opened could credit that 'footsteps could follow without previous arrangement in such perfect Indian file.'" It is in the hope of leading others also to the reflection that conclusions thus confirmed must be *very close to the truth,* and hence to the furthering as much as is in their power the interests which both this able judge and ourselves have alike at heart, that with Mr. Hewitt's permission we mention these facts; and now proceed to give his remarks without further preface:—

"I am myself, by long experience, perfectly convinced that the so-called 'open judging' is not the best adapted to promote the success of poultry-shows; but that in order to obtain the most reliable awards the judges ought to be screened from constant 'touting,' and from the unseemly display of violence of temper sometimes ensuing when awards unfavourable to the interests of particular individual exhibitors then on the spot are recorded. Nor is this the worst light in which open judging can be viewed, as may be easily imagined from the following facts:—I have judged 'openly,' when exhibitors, after posting themselves on the opposite side of the pens then under examination, have said audibly enough for any one easily to hear, 'I bred all my best chickens this year from that hen;' or, as in another instance, 'That's the same cock I won with at —— show;' or (*as occurred since this has been put in type*), when judging with Mr. John Martin, where

an exhibitor actually came up to us and stated directly, 'Those are the best pens in the show, and win wherever they go.' They were at the time not judged, and I am glad to say were fairly beaten.

"Another case quite as annoying to those on whose awards all the *responsibility* depended is worthy of mention. Since our largest show has adopted 'open' judging, a person who had obtained access by payment of the admission money for that especial day—a sum, by-the-bye, which, though large in amount, most probably injures as much one way as it improves in the other the general finances (so far as *poultry* is concerned) of the show—when civilly remonstrated with by the arbitrators, urged that he had *just as much right there as we had*, and purposely continued listening to every private remark that emanated from either of us. Finding it simply impossible to go on in this way, we courteously explained that 'either he must go out, or we must.' Although evidently a really well-educated man, and replete with aptly-chosen arguments in defence of his *paid-for* rights, he at length purposely turned his back against the fowls in the next class, to prevent our seeing them, and, in a way more conspicuous and offensive than ever, defied our legal right to remove him. On remonstrating with the committee, who concurred with us that he was *not* under the influence of liquor, but was most probably trying to provoke others to some show of temper, he was at length with his companion removed, but certainly more by coercion than by coaxing. I may confidently ask, can judges be equally cool and collected under such circumstances as though nothing of the kind had transpired?

"I look upon 'open judging' *as a grave and serious blunder*, and I say it because, as in all other matters, so in the management of poultry exhibitions by committees, perfection can alone be obtained either by dearly-paid-for experience on the one hand, or by availing themselves of the recorded conclusions of those who have preceded them. My own impression is simply that, in every case where it is possible to carry out the plan (and excepting in an open field, this is easily managed), no person beyond a careful man accustomed to handle poultry should be admitted to the show at all, *from the time the birds are all penned until the awards are fully completed.* This one attendant (or one to each set of judges) should be a man well practised in taking birds in and out of the show-pens; and should the judges require his assistance to ascertain beyond question, 'by handling,' any dubious point that may arise, he should be always ready to take out any fowls selected for especial examination, and then *withdraw a few yards, beyond earshot*, during the time occupied in final consideration.

"This leads me on to another item not less deserving of attention, viz., the wilful injury of prize birds at exhibitions. A brief anecdote will be my best explanation. Not long since I was waiting to begin judging at a show, where the arrangements, from a variety of mishaps, proved incomplete for more than two hours after the time originally fixed. I had walked about the field fully that time (or even more) '*doing nothing*,' when it suddenly commenced raining with great violence. I was making off for shelter to the inn, about two hundred yards away, but a committee-man called out, 'Mr. Hewitt, come into the tent, or you'll get soaked to the skin.' I complied, and sat myself down on an empty basket at the entrance. Shortly afterwards, an exhibitor's man came into the tent, and spoke to me as he passed as to the weather; my eye naturally wandered after him, as he took a basket he was carrying to a large class of Asiatic fowls, many pens containing specimens at once ponderous and characteristically perfect. After promptly penning the birds with which he was entrusted, he hastily glanced along the class, and seeing a pair he well knew must beat him, put his hand through the door, abruptly grasped the hen by one leg, and shook her violently. I was not long in leaving my seat; and getting alongside, abruptly asked, 'What on earth did you do that for?' His reply was a lie—for it is quite as well to call things by their proper names—'They were foighting.' I rejoined, 'If you don't get off at once, I'll fetch the

two policemen from the entrance-gate to *foight you.*' The committee were desirous to hush it up, rather than expose the delinquent, for the sake of their show; and consequently there was no present punishment: still, I am glad to state, the injured hen, though '*scarcely able to make a stand of it,*' to use the words of one of the committee, was eventually (with her companion) the recipient of the first prize. We all know tails of winning cocks have been purposely pulled out on their success being first known at shows, and ofttimes within even a few moments of the awards being announced, by whom, of course, it was next to impossible to establish. There stood the injured birds, as reliable data it had been done certainly by some one, and not as generally urged—by '*nobody.*'

"I most willingly admit there are quite as honourable individuals among the poultry-men of those exhibitors who show extensively as in any other classes of society; and I verily believe as strictly conscientious feeling is often displayed by the inmate of the cottage as of the castle: yet I cannot but urge that as these black sheep *do* occasionally intrude themselves, let the rule be, *all out till opening time*, and then, with such proviso, no hurt to any fowls can ensue from the spleen and disappointment of competitors, be they whom they may; for when the show is well filled with visitors such practices will rarely if ever be attempted, conscience, as a general rule, making cowards of the guilty.

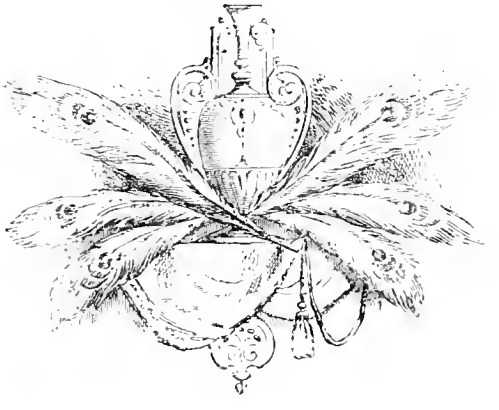
"Again, another point. Birds I am confident have at times been changed, prior to, *during*, and immediately upon the completion of the judging, to obtain surreptitiously some much-coveted premium. This, it appears to me, might also be checkmated to some extent by committees refusing any one admission until the awards are completed; and to obtain this desirable object also leads to another suggestion against these corrupt practices, striking as they do at the very life-source of our poultry shows, and which in some hands I am really at a loss to characterise in words as strongly as deserved. It is this:—Independently altogether of the judges doing so, let one of the committee go round and mark down all the *empty* pens in a note-book *before* the judges commence their duties. It will always be expedient to leave this 'checking off' to the *last* moment, even if he and the arbitrators both begin together; but as he would have nothing to do whatever with the awards or relative excellence of the pens on exhibition, a minute or two would send the committee-man far ahead of the prize-giving officials, and would render any after-conflict of assertion as to empty pens impossible.

"Another circumstance that at intervals has given much pain to acting committee-men, has arisen from wilfully displacing the prize-cards; whether simply from that pure spirit of mischief for which there are individuals who hold an unenviable notoriety, or for baser purposes, it is always difficult to determine. Some of the north-country shows have been especially practised upon in this manner. This might readily be defeated by writing legibly on the different prize and commended cards, *before* attaching them to the show-pens, the *number* they hold in the printed catalogue.

"The return, along with the survivors, of fowls that unfortunately die during a show, for the satisfaction of owners as to the causes of death—the dispatch every evening by post of notice of birds 'claimed' at shows, to allay the anxiety of exhibitors as to their non-return with the other pens—and the rule to prevent committees being held responsible for unforeseen accidents at shows—were suggestions of my own through the press many years back; and time has not only confirmed their advisability from their general adoption by committees, but also added to my own first conviction of their utility. I hope some of the present hints may prove equally worthy of at least consideration, and if it is supposed any comments I have written are intentionally personal, I can only assure all parties I had no such motive in their compilation.

"There is, however, one other feature I cannot pass silently, viz., the *betting* practices of some few would-be-called amateurs (which decidedly they cannot be) as to the decisions. When it is known that eight and a half guineas have been given simply for the loan of a pen to win a five guinea cup; and other cases have occurred where thirty-five pounds have been lost and won by *bets* on a single award; it is not difficult to conjecture what these contingencies may give rise to, to secure the attainment of a "win;" or what compromise of all that is honourable, straightforward, and just may be wilfully accepted for the sake of obtaining such undeserved pecuniary success."

We would only add one more remark, relating to the *payment* of judges. One or two of the best in England act without fee or reward, and have long done so; but we are far from sure the principle is a sound one. Deeply indebted as the whole body of amateurs must be to gentlemen who thus devote time gratuitously to their service, we cannot but think of the future also, and of the need of a *constant succession* of skilled arbitrators being maintained who shall, as required, become qualified to take the place of those who retire. It is worthy of consideration whether able service in this department, as in others, does not *deserve* remuneration without being open to any suspicion of being mercenary; and whether a fair scale of judges' fees might not be richly repaid in the creation of an increased staff of skilled judges, who might be able then to afford the time which they cannot now spare to the onerous duties of this office. More judges are needed at almost every show; we rarely visit one on the judging-days without seeing for ourselves that the arbitrators are grossly overworked; and the complaint generally is that more of really capable men *cannot be got*. The judges themselves would gladly hail really able additions to their ranks, and the question may perhaps, now we have stated it, be thought deserving the serious attention of amateurs. Expense may perhaps be made an objection; but in regard to this point, as with respect to the reprehensible practice of holding shows in open fields without any protection whatever for the fowls, it is a fair question to ask, if support enough cannot be obtained to carry out such matters *properly*, whether any show should be held at all? The multitude of petty shows in England has long been thought by many to be a serious evil; and if several of these little starvelings were by the pressure of such considerations amalgamated into one, well supported and under better management, we are far from certain that all parties might not be benefited thereby.



CHAPTER XIV.

BUYING, SELLING, AND EXPORTING.

No amateur can get on without occasionally buying other stock; and every fancier has generally some surplus which he wants to sell; hence a very few words on these subjects may not be out of place.

Our own experience is, that it is easier to sell first-class birds at very high prices than stock of a more moderate quality. It is within our personal knowledge that one poultry-man, at the close of 1871, sold three cockerels for the aggregate sum of £72!—hence we need hardly stop to prove that there is solid remunerative return for the judicious breeder; and we need only add that the *very* best birds *cannot* be obtained at small sums. We make this remark because we have repeatedly received letters asking the prices of stock, describing what is wanted in words that exhaust all the perfections of any "Standard of Excellence," only to find the remark at the end that it is useless to ask more than a moderate price, as such will not be paid! To write in such terms is simply the presumption of ignorance; and we speak the literal truth when we say that eminent breeders are in the constant habit of *refusing* such sums as £20 for their best cocks or pairs of hens, if they think they cannot spare them without injury to their own breeding prospects. To expect to get perfect birds for such sums as many people seem to imagine is ridiculous; indeed, a quite *perfect* bird is perhaps never seen. Yet fanciers every now and then receive such letters as the following, which came to us quite lately, and which we preserved as a curious specimen of the class to which it belongs. The Italics are those of the writer:—

"DEAR SIR,—Kindly let me know the lowest price you can send me a pen of Dark Brahmas to win the *cup at Dublin*. They *must* be perfect in *all points*, and price *must not be very high*. "Yours truly,

"L. WRIGHT, Esq. * * *

"P.S.—They *must be certain winners* or of no use."

A breeder will always buy for some specific end; and we have ere now been glad to give £5 for a heavily-hocked cock, and double that sum for a bird likely to prove valuable as stock, though not fit to show in good company. The best plan when the judgment can be trusted—and we have already advised that no one should buy to any extent before—is either to visit some first-class yard, and there pick out and ask the price of the bird wanted, or to examine the class at some *large* show where birds are extensively entered for sale. At such a show as Birmingham a good judge can almost always select a sound, valuable bird, at a very moderate price—such as meets his particular want, whatever it may be—but *not* a certain winner at the next show he sends him to, unless he will pay a corresponding figure. The same can be done from a good yard; but in the latter case *no* price can guarantee a purchaser's getting the very best bird of the year, for the simple reason that, however good a vendor may know his bird to be, it cannot be known till after competition whether some one else may not have one a little better. We knew a curious case last season, in which a certain breeder sent a Buff Cochin cockerel to an early show, so clearly ahead of

all competitors that he was quickly purchased, at the price of £20, by a wealthy amateur; who naturally thought he was about to claim the honours of the year. But it happened that the bird in question was only his breeder's *second* best, and the seller accordingly "came out" next month with a bird which beat him easily, and was eventually sold at the high price of £30.

One reason of our mentioning these things is to show from another point of view to that taken in Chap. X. how unsatisfactory it will often be to buy a bird merely for the sake of winning with him. Some definite object besides should always be sought, and it will often be found that birds which really are the best for show are not what is required by the breeder for his particular needs.

When the judgment *cannot* be depended upon, and patience will not hold out till the necessary knowledge has been acquired, we can only advise that some one of character should be applied to, who will give some personal guarantee that the birds he sells are mated as they should be, and will produce *some* proportion of good chickens. That proportion will of course vary with the price; all fanciers have in their own yards better and worse—some hens which hardly ever breed a bad chicken, and some which perhaps only yield ten per cent. of good ones. That there are many who will state honestly what their birds may be expected to do, we know from personal experience ourselves when we knew a great deal less than we do now; but we may add that such honesty does not always meet its due return from the *applicants*. For instance, we well remember a man once asking for a pen of Brahmas at a moderate price; and we offered him at an average of two guineas per bird a hocked cock then only a year and a half old, for which we had ourselves given five guineas as a cockerel, and two hens going into their third laying season, short of feather. From this identical pen we had bred as good chickens as we ever wish to see; and only sold them because it is a rule with us always to sell our hens while they are still good for something, and thus keep our stock young; and we had no others to suit this cock. We received in reply a most insolent letter, saying the writer supposed we "did not know he was *aware* that vulture-hocks were a disqualification," and hence had tried to "impose upon him" with them! We have had milder cases of the same gratuitous and insulting suspicion, simply because we have honestly specified all the faults our birds had; and the experience of others has been the same as our own. Honourable feeling is due on one side as well as the other.

Really good birds can almost always be sold at fair prices at good shows, especially if one of the entries wins a prize. Thus, if any exhibitor wins either of the first three prizes at Birmingham, any cockerels of fair quality which he may have entered at a price not exceeding £5 each in the major classes, are tolerably sure to be claimed. Highly-commended birds, also, at first-rate shows, will generally realise £5 per pen; bad stock we are not speaking of. In spite of the crowd of exhibitors, the number of really skilled breeders in each class is so few, that any one who has the taste, and will give the time, for the *study* of the subject, *can make his mark* in the poultry world; and once known as a man who really "has a strain," he can sell pretty readily—until then it is difficult to do so except at very moderate prices, save for such individual birds as are good enough to make their own merits known. It is a notorious fact, that some of the most frequent winners are rarely applied to for fowls. It is known that they did not breed their birds; and the many who are in that secret prefer rather to resort to those carefully-bred yards which they know to have *sold* the fowls, although owing to the very fact of such sale they may be making just then less noise in the world.

When a little solid reputation has in any way been established, it pays to advertise any surplus stock. If the reputation is very high this is often not needed, but every egg and bird may be engaged weeks in advance of the time they can be spared. We know of no pursuit in

which steady perseverance and real study of the subject are more certain to be rewarded by success than the poultry-fancy, if honour and honesty be also preserved; for a "character" is absolutely necessary to *continued* success in this field, and rightly so.

Fowls sold at a fair price ought to be sent away in a good poultry-basket. It is annoying, and risky too, to receive valuable fowls in a dirty, broken-down hamper; and this kind of meanness, by its very pettiness, produces an impression which may do lasting injury even to the vendor. The label should be distinctly written, in printed characters if possible, Fig. 51 being the best form with which we are acquainted.

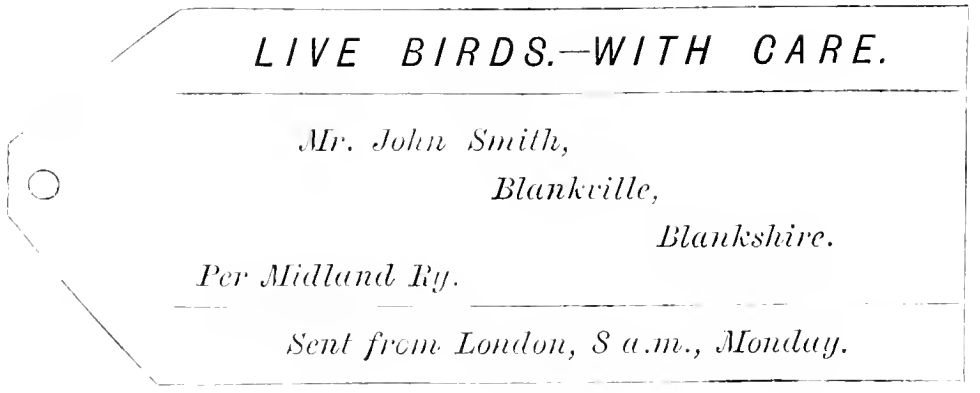


Fig. 51.

We can state from experience that writing the time of dispatch on the label is a wonderful stimulus to punctual delivery; but as a rule live poultry, we are bound to say, are seldom delayed. The last thing before sending off, if in the morning, they should be fed with soft food in moderation; if at night, they need nothing special except for very long journeys. We usually prefer to send off by the night mail trains, as such generally run through, and there is no loss of time at junctions.

The export of prize poultry has lately developed to a very great extent, and the management of fowls on ship-board is much better understood than it was formerly. They are best sent in *wooden* coops, barred in the front only. These should have a stout canvas cover to draw over in rough weather, and the bottom should be raised by legs several inches above the deck, the top being tight and weather-proof. Handles should be provided at each end for convenience of moving. Various plans may be adopted for the interior, and one much used by some American fanciers in sending fowls to England is to divide the coops by partitions into chambers just wide enough to hold one bird without turning round, like fatting-pens; but on the whole, from all we can gather, we should prefer a moderate-sized coop for several fowls together. For three Asiatics we should use a coop about three feet square. A movable low perch, which can be fixed at night and removed in the day, adds much to the comfort of the birds.

Plain directions for feeding should accompany the fowls, embracing the following particulars. A supply of grit or gravel should if possible be taken, and if so two or three handfuls should be thrown over the floor of the coop every morning after cleaning. In that case the fowls should be fed with a moderate quantity of friable dough morning and evening, and a very little wheat or maize at mid-day, water being constantly looked after. The food and water tins should be *outside* the coop, or injury may ensue, as in the case of a fine Brown Leghorn hen sent for portraiture in this work, whose head was so severely injured by the tin in some way that she died the evening of arrival. If gravel cannot be had, the soft food should be mixed with a small portion of coarse

fresh-water sand daily, and less corn given. Some turnips, swedes, or mangolds should be also laid in, and a portion given daily minced up into *small* cubes; this will effectually supply the place of fresh vegetable food, and by attending to these simple precautions, and only feeding to the extent of eager appetite, the fowls may in most cases be sent long voyages and maintained in good condition. Barley or oats are unfit for the food of sea-going birds, and should be discarded.

Before putting the birds in the coop, this should be thoroughly sprinkled with dilute carbolic acid, which may be repeated (on any fine day) if insects appear, some one holding the fowls while this is done. If the coop has to pass the tropics, some kind of light framework should support an awning a little way up from the top, and the deck *round* the coop be pretty freely watered during great heats, to save the birds as far as possible. These things cannot always be done on ship-board; but often an arrangement can be made with some one to look specially after the fowls; and it is well worth a reasonable sum to ensure that such few and simple essentials for their safe delivery are punctually attended to.

CHAPTER XV.

ENEMIES IN THE YARD.

THE poultry-yard is subject to many depredators, and before passing from the more general portion of this work it may be well to devote a few paragraphs to the various modes in which these may be either captured or defied.

Against *thieves or foxes* little can be done beyond making the roosting-house secure, and keeping a good watch-dog, or fixing some kind of alarum. Grown fowls have little to fear except from these two. Foxes might be shot, but that in many parts of England this would be regarded as almost equal to killing a man. Alarums which go off when a door is opened clandestinely are easily contrived, but need caution. We knew a case in which one was arranged so as to explode a fulminating compound unless the door were opened in a particular way; and one day the lady proprietor herself, *forgetting* the elaborate contrivance, let it off unawares, and received a shock to her nervous system of rather a severe character.

Cats are only enemies to small chickens, and when these are about a pound weight they are, as regards this animal, pretty much out of danger. We have already described the covered coop, by which very young chickens may be preserved; but after a week or two such close confinement is by no means beneficial. The plan may however be extended by enclosing a large run with a

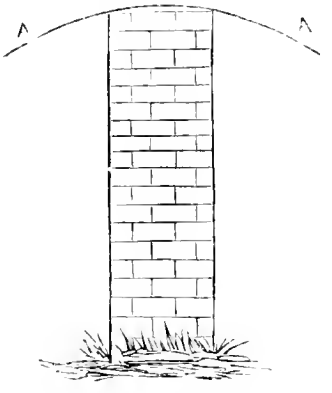


Fig 52.

fence about six feet high, made of netting, which very few cats will attempt to scale. In our own case we have enclosed a yard about fifty by thirty-five feet, and finding the cats jumped into this from the bottom of a lean-to roof at one end, we stretched a yard-wide piece of netting, upright, along this bottom edge, and find the animals completely baffled; they walk along the roof and look through the netting, but will not face the climb and consequent jump which they must overcome before they can enter the run. We have for the last six years always protected a chicken-run in this way, and would strongly advise the plan to others, as we never lost a chick since. A six-feet fence of netting is ample, with a strip along the home side of any roof or wall from which a cat can jump;

the expense is very trifling, and there is no after anxiety. Another mode, when the run is surrounded by walls of moderate height, is to fix along the top a yard-wide netting, A A, as shown in Fig. 52, projecting over each side of the wall. Few cats will venture into a yard thus protected, and any which do cannot escape, and are then easily "disposed of." Killing them is not necessary; a good garden-engine well handled for a quarter of an hour, the poor wretches vainly striving to escape the hated element, will give them such a taste of *that* yard that they will never enter it again. These simple methods of protection are better than destruction; but should the latter be determined upon, a common box-trap, made large enough, and baited with meat, will catch numbers, cats being of a very unsuspicious disposition.

Rats give more trouble and are more destructive, preying upon eggs as well as chickens. We have heard it said that one or two guinea-pigs will keep them away, but have never been able to satisfy ourselves that this has been *proved*, though there is no doubt but the two animals will fight in the most determined manner. They may, however, generally be kept out of a house by well laying it in concrete and cement; and as they almost always do their foraging in the night, keeping them out of the house is almost equivalent to defying them altogether. Another good plan is to clear out all the loose stuff of the house or shed floor, and lay down inch-mesh wire netting, carrying it also for a yard up the walls or sides. The sand or ashes may then be replaced over the netting, and if the door be shut at night no rats nor any other animal can enter. A good

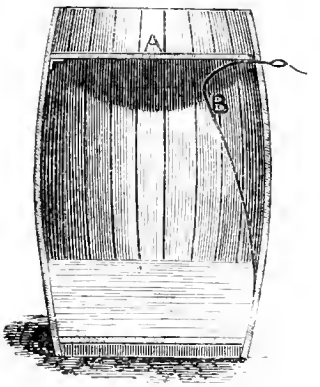


Fig. 53.

lively terrier is also an excellent safeguard. If necessary, traps may be set, and when the bait is anointed with oil of rhodium, few rats can withstand the temptation. It is best to use two at a time, baiting both for a week before setting. Then set one, adding the oil of rhodium, and use it as long as rats are caught, leaving the other open, but not baited or set. When the first is forsaken, leave it open, but unset and unbaited, and use the other; and when they get shy of both, by covering over so as to appear hidden, the rats will often resort to them again. In this way, and by using the oil of rhodium, or valerian, for both of which rats appear to have an irresistible passion, they may be nearly exterminated. A simple but very effective rat-trap of another character may be formed out of a barrel, as shown in Fig. 53. Fit a loose cover, A, by a hinge at the side, so that it will drop unless held up by the spring-wire catch, B. A string from this wire must be carried through a small hole to the *outside* of the building in which the trap is set, and some water put in the bottom of the barrel. Then at *every* time of passing outside, pull the string, and directly after go in and re-set the trap. Often, of course, nothing will be caught, but if judicious bait be placed on the lid, perseverance will surely tell a tale in the long run; and when one rat is thus nabbed, the noise

he makes splashing about in the water appears to attract rather than warn the others. We would only employ poison when all other means failed, not merely for humanity, but to avoid any danger to the chickens. The best poison is the following, recommended by Dr. Ure to the Council of the Royal Agricultural Society:—"Melt hog's lard in a bottle plunged in water heated to about 150 degrees of Fahrenheit; introduce into it half an ounce of phosphorus for every pound of lard, then add a pint of proof spirit or whiskey; cork the bottle firmly after its contents have been heated to 150 degrees, taking it at the same time out of the water, and agitate smartly till the phosphorus becomes uniformly diffused, forming a milky-looking liquid. This liquid, being cooled, will afford a white compound of phosphorus and lard, from which the spirit spontaneously separates, and may be poured off to be used again, for none of it enters into the combination; but it merely serves to communite the phosphorus, and diffuse it in very fine particles through the lard. This compound, on being warmed very gently, may be poured out into a mixture of wheat flour and sugar, incorporated therewith, and then flavoured with oil of rhodium, or oil of aniseed, &c. This dough being made into pellets, is to be laid in rat-holes. By its luminousness in the dark it attracts their notice, and being agreeable to their palates and noses it is readily eaten, and proves certainly fatal."

Weasels and similar vermin only give trouble in very rural neighbourhoods. They generally come in a regular track, and may be caught in traps, baited with dead birds or chickens. They do not, like rats, care much for oil of rhodium; but the whole tribe are fond of musk, and the bait may be scented with this to great advantage.

Mice do no harm to chickens or eggs, though we have had houses so swarming with them that they would run out from under broody hens when examined at night. They however undermine the floor, and eat a great deal of the food. A good cat is the best preventive, and if brought up from kittenhood amongst the chickens may be left to pass the night with them with perfect safety. One of the best traps we know of is a plain sheet iron or tin vessel, about two feet deep, and open at the top. If one or two of these are put in the most over-run places, with some barley in the bottom, the mice will enter to feed, and are unable to jump or climb out of the smooth prison again. We have thus used one of the tins or iron barrels, holding about two bushels, in which paint is often sold, and caught seven or eight in one night. We confess, however, we never had the heart to be very hard upon mice, they have a knack of getting so tame. We have had them come out and feed within a yard of us in broad daylight; and it is very hard to kill creatures that behave in such a confiding manner.

Minks and *Skunks* are very destructive to poultry in America. The mink is pretty easily captured, as it is the nature of this animal always to return for its prey, and if missing to hunt about for it. If, therefore, a mink have left a chicken, and *that* be used for the bait of a trap set near the place, a capture is all but certain. The best trap is that known as the regular "mink-trap" in the United States. Skunks, on the contrary, after visiting a place may not again go near it for a long time, and the only effectual plan of trapping them is to set the trap near their burrows. Mr. Hungerford states, in the *Rural New Yorker*, that he has found one of the best skunk-traps to be a common barrel, nearly balancing it on its side in the middle, on a piece of wood about seven inches high, the mouth being inclined downwards. When the skunk goes in for his bait, which is put at the bottom of the barrel, as soon as he passes the centre it turns up, and he is caught. The only thing is to adjust the centre the proper height, so that the barrel may just have impetus to turn completely up on its bottom, without going over. Eggs half rotten, or a dead chick, are the best bait. Skunks are only troublesome at night, and by housing the chicks in good sound wooden coops may be entirely checkmated.

Hawks are only destructive in the country, or very open suburban districts. They usually visit a yard at about the same hour of the day, and hence are easily lain in wait for and killed by a good marksman. Failing this, it sometimes answers to turn loose a good sharp-fighting Game hen with her chickens, previously well heeling her with steel: unequal as the contest might be thought, such a mother has on more than one occasion proved victorious.

Other birds are chiefly devourers of the grain or other food; and there will be little of this if, as we have so often advised, the chickens or fowls are thrown it only as they eat it, with the owner or attendant standing by. Where the breeds kept are not much subject to over-fattening, another method of cheating the birds is to feed with maize or Indian corn, the grains of which are too large for them. Still another plan of contending with these little enemies is to employ a feeding-cage or pen entirely enclosed with wire, with the exception of one or two hanging swing doors. These the fowls soon learn to push up, and feed themselves without difficulty, while the little thieves are completely "done" out of any participation.

Lice or other insect vermin will rarely give trouble if the houses be whitewashed twice a year with good hot lime. If some sulphate of iron be dissolved in the water, the power of the wash will be much increased. The dust or sand in the sheds must also be looked after, and cleansed by sifting, or else renewed altogether at due intervals. If, in spite of all, the tiny pests appear, the houses may be effectually cleared by syringing with diluted carbolic acid, watering the floor with the same mixture, or freely scattering about from a dredger some of M'Dougall's or any other Carbolic Disinfecting Powder. The smell will last for days, and no vermin will withstand it long. The ordinary brown acid of commerce will dissolve in hot water, though not in cold; but a clear preparation may also be purchased which will mix in cold water to any strength desired. By the judicious use of one or the other of the carbolic acid preparations, all insect pests whatever may be easily defied.

CHAPTER XVI.

DISEASES OF POULTRY.

NEARLY all poultry diseases are caused by either cold, wet, want of cleanliness, or bad feeding; in other words, by *neglect* somewhere. It is easier to guard against this than to cure birds when they are ill, which is almost always a very unsatisfactory speculation. The chief obstacle is that, being covered with feathers, there are few *symptoms* to observe; and as the poor dumb things cannot tell what is the matter with them, we often have to prescribe very much in the dark. We see, for instance, a fowl evidently ill; with feathers ruffled, comb dark and dull, appetite nearly gone, and listless and dull in manner; but this may be the result of many different causes, and more special symptoms are hard to discover, seeing we can hardly feel its pulse, and its skin is difficult to examine. Common fowls hardly pay for the trouble they give in treatment; but with valuable birds the case is different, and it is chiefly on their account we give what is yet known, so far as we have been able to discover, of poultry disease.

There can be no doubt whatever that a certain per-centage of death amongst fowls is an actual benefit. Fowls, like everything else, *must* die *some time;* and, again like everything else, it can but seldom happen that the cause of death will be mere old age. A certain proportion of loss, therefore, is not necessarily a proof of mismanagement, but is rather part of the economy of the great Superintendent of the universe, by which creatures no longer really capable of maintaining the vigour of the species are taken from a world in which they are of no further use. As is well put by a writer in one of the American poultry journals, "the sure eye of Nature has picked out the very ones that you would be glad to be rid of could you detect them, and has left you the hardier individuals to breed from; the weakness, moreover, often consisting in some profound fault that does not show itself."

It is cases of this nature, in which some extra trial of weather or circumstances has only developed latent weakness, issuing or not, as the case may be, in any well-marked complaint, which are difficult or even impossible of cure. There are however many cases in which exposure or other active cause has occasioned acute disease in the most healthy birds, presenting plainly-marked symptoms, the treatment of which is well understood. Such are mostly amenable to judicious treatment, and fowls of priceless value may thus be saved, which otherwise must be lost to the amateur. Between the small group of such plainly-marked diseases—as roup—and the many instances in which to all present knowledge the symptoms are utterly obscure, and recovery must be left to the natural powers of the bird, aided by such nursing and regimen as appear best, is a large class of cases in which partial ground for guidance is afforded by some one or more symptoms of a marked character. In these also treatment may be adopted with hope if the affection be of a sudden or acute character; but chronic symptoms usually betray constitutional weakness, and are not only difficult to deal with, but even in the interests of the yard it is often better to let them run their natural course, or to anticipate their effect by a merciful execution.

In our treatment of this subject we have much pleasure in acknowledging the valued

assistance of Mr. Joseph Hinton, a gentleman who combines the knowledge of a genuine "fancier" with that of an experienced medical man; and who has not only kindly revised the whole, with an approval of our own prescriptions which warrants the entire confidence with which we give them, but has added valuable contributions of his own, as mentioned in their place, or distinguished by quotations and initials.

For convenience of reference, we shall refer to the various diseases in alphabetical order.

Abortion.—If violently driven about, hens sometimes suffer severely in this way; dropping suddenly either a perfect or a soft egg, and afterwards moping about with every appearance of being seriously ill. In such cases, which must not be confounded with the mere ordinary laying of soft eggs, the bird should be put by herself in rather a dark pen, with a nest in one corner. A little carbonate of soda may be put with advantage in the drinking water, and the diet should consist of soft food only, given sparingly. This is to be continued for a few days, unless sooner recovered. It is wisdom in all such cases to watch the yard closely; it is quite possible, especially with Malays and Game, that there is a bully amongst the flock, which is a terror to the whole of the others. With this terror, if the yards are confined in area, abortion is very probable, and the termagant had better be removed, and if not very valuable, killed.

We have known abortion also take place in circumstances which left no other conclusion possible than that the grass in the run was affected with ergot. Should this appear probable, besides treating the birds, the whole run must be mown as close as *possible* with a machine, and the cuttings carefully swept and removed. Fortunately this occurrence is very rare.

Apoplexy—Paralysis.—These two affections are more or less connected. A true apoplectic fit would more probably arise from high feeding than any other cause, and maize or Indian corn is very injurious to some breeds on this very account. Apoplexy may give some warning symptoms. We should fear its attack if a bird walked unsteadily and as if it were giddy. To such cases, fasting and a brisk aperient—as fifteen grains of jalap and one grain of calomel—will be very useful. When a vessel has given way on the brain, or in its substance, there will be then a *sudden* attack of loss of power and consciousness, possibly only on one side. If a large quantity of blood has escaped the case will end fatally in a short time, and it may be instantaneous. If life does not appear extinct, the wing should be lifted, and the point of a lancet, or more probably penknife (for not a moment must be lost), plunged longitudinally into the large vein which will be seen under, and the bird allowed to bleed freely. If consciousness return, the flow of blood may be stopped by some strong styptic, such as burnt alum, diluted carbolic acid, solution of sulphate of zinc, powdered matico, or gallic acid; or pressure may be kept up by the finger for some little time on the incision. In any case of operating on fowls, they must be carefully watched, as they will try to peck open the place, and life may be lost from hæmorrhage. The fowl must be kept on low diet for several days.

Generally the immediate cause is some sudden excitement or bodily effort. We have known in our earlier days a highly-fed young cock drop down dead after being put back after show in his old run with three others, before receiving a peck, but in the very moment of placing himself in hostile position; also when a young Cochin cock was taken up whilst fighting, he struggled so violently that he died "*in arms*." Cochin hens, similarly, are sometimes seized while laying. We need hardly say that after a case of this sort, the condition of the other birds should be examined, and the diet reduced at once if necessary.

True paralysis is the result of some pressure on the brain, it may be from effusion of blood, or

from other causes. "It is very improbable," says Mr. Hinton, "that paralysis will be recovered from without detriment to the bird: if a cock, the carriage will certainly suffer, and there will assuredly be an awkwardness of gait, making it every way undesirable to retain the bird. If the paralysis be of the legs only, with the tail drooping, I should be inclined to think that the bird has received a blow on the back, injuring more or less the spinal cord.* Here the aperient and rest—absolute rest—will be of service. Strychnia in doses of one-sixteenth of a grain, twice a day, may be useful *after the first effects have passed away*, but not in the first flush of the disease. The cure of these affections is certain to be tedious."

BLACK-ROT.—This was a disease to which Spanish fowls particularly were once rather subject, owing in our opinion to the strains imported from Holland, in order to counteract the rough faces of the then English fanciers; but lately the complaint has been far less common, though still occasionally met with. The symptoms usually commence with blackening of the comb, followed by swelling in the legs and feet, accompanied with gradual emaciation.

Treatment is only efficacious in the earlier stages, and consists of a dose of calomel or castor-oil to commence with, followed by "Parrish's Chemical Food" or any other simple tonic treatment, with warm and nourishing diet.

BRONCHITIS.—This is not a common disease, and is denoted by the frequent *coughing* of the fowl, as distinguished from a cold in the head only, which last appears in a discharge from one or the other of the organs. The fowl must be removed to a dry and moderately warm place, and the water slightly acidulated with sulphuric and nitric acid, adding enough loaf sugar to make the whole *slightly* sweet and acid to the taste. Under this simple treatment, the fowl will usually improve rapidly. A little cayenne or ginger seasoning may be added to the food with advantage.

BUMBLE-FOOT.—By this euphonious term is denoted the corn or abscess at the bottom of the foot, which is continually annoying the breeder of Dorkings. We formerly believed this to be caused by either narrow perches, or by descending or walking on sharp gravel, which irritated the feet; but during some years we have collected so many proofs of the disorder occurring when the perches were not only low and broad, but where nothing but the softest turf was at command of the fowls, that we have been gradually forced to the conviction that the affection is in some way correlated to the abnormal structure of the Dorking foot, as shown by the fifth toe. As bearing upon this view, we have looked with much interest for signs of the affection in the Houdan breed, which was originally very prone to produce only four toes, but in which the fifth toe is now a nearly fixed character. Accordingly, during the last few seasons we have seen several Houdans with "bumble-foot," though as it is possible they might have been even *recently* crossed with Dorkings, even this evidence is not entirely conclusive. The fact that the equally heavy Brahma or Cochin is free from the affection, does however prove that the cause can hardly be that commonly supposed.

Some cases appear incurable, but if taken in good time the daily application of lunar caustic in the ordinary manner will often effect a cure, or the pigment of iodine of the British Pharmacopœia may be daily painted over the spot with a brush. Later on, actual excision becomes necessary. In cases when the tumour is soft and full of pus, or in the form of an abscess, a free puncture may be made, after which the matter is pressed out, the part fomented with warm water, and after a day or two caustic applied as already directed. In other cases the tumour appears

* The most frequent cause of such injury, and one we feel sure will account for many mysterious cases, is the bird rushing under a low perch after a hen.

hard, and the incision should be made in the form of a cross, when a sharp squeeze will generally expel the offending matter through the wound. In all cases, until a cure be effected, the perch should not exceed six inches from the ground, and be padded with carpet, so as to take off as much pressure as possible; or it will be better still if the bird is compelled to sleep on straw.

Other large breeds occasionally suffer from abscess in the foot, but in these cases some injury or other special irritating cause can generally be detected. In such cases the matter formed is usually of the consistency of cheese, and as often as not the tumour extends through the *upper* side of the foot, sometimes forming a mass the size of a cherry in the web between the toes. These are easily extracted, and usually heal without difficulty or showing any tendency to return.

Canker.—See *Ulceration.*

Catarrh.—All fowls are subject to a common cold, shown in the usual way by more or less discharge from the eyes or nostrils. It is not dangerous, but if neglected may issue in roup. Remove to a warm place, and drop three drops of the No. 1, or *mother* tincture of aconite, in half a pint of the drinking water. Feed moderately on soft food only, mixed *warm*, and seasoned with the No. 1 mixture given at page 141. If not better in a few days, and especially if worse, treat as for roup, the presence of which may then be suspected.

Cholera.—During the last few years American yards especially have been devastated by a disease previously unknown, to which the name of Chicken Cholera has been generally given; and of late many cases have occurred in England. The symptoms are by no means uniform, and do not in all instances present a clear choleraic character; but the prevalence of the disease during hot weather, its epidemic character, and the usual presence of diarrhœa, do present evident analogies which may perhaps justify the name given. We cannot, however, resist the conclusion that many cases have been termed cholera which had no claim whatever to that title, but were clearly to be diagnosed as disorder of the liver, and to be treated accordingly.

In true chicken cholera there is a sudden and violent accession of thirst, accompanied with diarrhœa; the droppings being at first of a greenish character, and by degrees becoming thin and whitish, much resembling the characteristic "rice-water" discharges of the same disease in the human subject. Great weakness becomes rapidly manifested, the fowl "falling about," usually by the water-fountain; and in some cases cramps also supervene. The bird also presents a peculiar "anxious" look about the face, which again is singularly characteristic of cholera in the human being.

The causes can usually be clearly traced on diligent inquiry. It will nearly always be found that there has been exposure to the sun without effectual shade, and that the drinking-water has become warm. In such circumstances the droppings have become offensive in smell, the grass in the runs has probably withered, and care has not been bestowed on supplying other and *fresh* green food. It must always be remembered that the *regular* supply of fresh green meat is the great preventive of diarrhœa in fowls. We never heard of a case of true cholera where cool shade was always accessible, fresh cool water provided, and green food looked after daily.

The disease runs its course so rapidly—death resulting in most cases in from twelve to thirty-six hours—that treatment is generally too late: but if diagnosed at an early stage recovery may be expected in about sixty per cent. of the cases from the administration every three hours of

Rhubarb	5 grains.
Cayenne Pepper	2 ,,
Laudanum	10 drops

administering midway between each dose a tea-spoonful of brandy diluted with rather less than its bulk of water, into which have been dropped five drops of M'Dougall's Fluid Carbolate.* Recovery is generally as rapid as the attack.

Whenever a case of true cholera occurs in a yard, ten drops of the fluid carbolate should be added to every pint of water, the fountain *kept cool*, and plenty of shade provided. By these means, with the free use of green food, its progress may almost always be effectually checked.

CONSUMPTION.—Years ago this disease was not so very uncommon among highly-bred fowls, but lately has almost disappeared. The causes are damp or cold, want of light, or constitutional debility. Wherever the cough of bronchitis appears to become chronic, with evident wasting and loss of strength, this disease may be suspected. Cure is hopeless when set in; but when any danger of it is feared, from past experience with birds related, the regular administration of "Parrish's Chemical Food," as advised for debility,† will offer the most probable means of protection. It is also very advisable to add cod liver oil to the meal food.

"In broods of early hatched chickens it will often be noticed that one or more do not get on. The face is shrunken, the wings droop, and the chick moves with a sort of hopping run on its toes. These cases I believe to be of scrofulous origin—they are the weakly ones of the brood—best put out of their misery—but if treated at all, must be dealt with as 'consumptive.'—J. H."

* The admirable preparation here referred to is a neutral solution of carbolate of lime, and sulphite of magnesia; being thus entirely free from corrosive or irritating effects, while at the same time combining most of the valuable properties of both carbolic and sulphurous acids.

† This admirable Syrup of Phosphates, to which we have already referred, is so valuable in many cases for highly-bred chickens, that for the sake of those who may desire to prepare it for themselves, we give the formula as stated by Mr. Parrish in the *American Journal of Pharmacy*, Vol. XXIX., page 573.

Protosulphate of Iron	10 drachms.
Phosphate of Soda	12 drachms.
Phosphate of Lime	12 drachms.
Phosphoric Acid, Glacial	20 drachms.
Carbonate of Soda	2 scruples.
Carbonate of Potassa	1 drachm.
Muriatic Acid	Each a sufficient
Water of Ammonia	quantity.
Powdered Cochineal	2 drachms.
Water sufficient to make	20 fluid ounces.
Sugar	3 lbs. Troy.
Oil of Orange	10 minims.

Dissolve the sulphate of iron in 2 ounces of boiling water, and the phosphate of soda in 4 ounces of boiling water. Mix the solutions, and wash the precipitated phosphate of iron till the washings are tasteless. Dissolve the phosphate of lime in 4 ounces of boiling water, with sufficient muriatic acid to make a clear solution; precipitate with water of ammonia, and wash the precipitate. To the freshly-precipitated phosphates as thus prepared add the phosphoric acid, previously dissolved in the water. When clear add the carbonates of soda and potash, and afterwards sufficient muriatic acid to dissolve the precipitate. Now add the cochineal mixed with the sugar, apply heat, and when the syrup is formed, strain and flavour it. Each tea-spoonful contains about 1 grain of phosphate of iron, and 2½ grains of phosphate of lime, with smaller proportions of the alkaline phosphates; all in perfect solution.

Though rather a long process, there is no difficulty about it. A chemical friend adds, "I find that it requires about 2½ ounces of hydrochloric acid and 6 ounces of liquid ammonia to dissolve and precipitate the phosphate of lime. If I were making it for my own use I should omit the cochineal altogether; it is quite useless, and is inserted chiefly as a colouring agent; and it only spoils, to my mind, what would otherwise be a very elegant preparation, as its addition causes so much extra trouble in straining." The syrup when prepared should be put up in rather small bottles, as it is apt to "candy" when once exposed to the air.

Cramp.—The most frequent sufferers from this affection are early chickens, which, if exposed to damp during cold weather, rarely escape altogether, however hardy the breed. The first symptoms may be anything *not quite right* in their walking; but very soon there is an evident tendency to contract the toes; till at last, if not checked, the poor little sufferers have to walk on their knuckles, or outside of the foot, in a manner painful to witness. The bird also squats on its hocks.

The great preventive is of course dryness, as chickens reared in an absolutely dry shed are almost invariably free from it. The treatment is also simple. If detected at an early stage, it will usually be sufficient to remove the whole brood to some place with a dry boarded floor, well sanded and kept clean. No floor is so bad for a permanent lodging; but in this case a few days' change indoors will often work wonders, and when recovered the brood may be put out again during dry weather. If the toes are much contracted, however, the affected chicks should be taken away from the hen, and put in a wooden cage well sanded, in a dry and warm place near the fire. Good food with a little tonic should be given—say the No. 3, page 141—and several times daily the legs and feet must be bathed in water made comfortably warm, opening and expanding the toes well under the water, and working them gently backwards and forwards, afterwards drying them with a warm cloth and putting the birds back in the cage. At night they should be returned to the hen with the rest; but every morning returned to the cage. Under this treatment improvement will generally be rapid; indeed we hardly ever had a case which did not yield to it unless of very long standing. Cramp in adult fowls can scarcely be distinguished from rheumatism, which see.

Mr. Hinton adds that, "opium in quarter-grain doses for a chick of three months old twice or thrice daily is a great addition to the treatment of this disease. In Malays I have noticed the cockerels only as subject to the complaint. When the bird is forced to walk, the feet are placed very heavily on the ground, making in dry weather a very perceptible noise, which, without any other symptom being present, is suspicious, and always induces me to watch the bird anxiously. If, with this, the bird squats much, it should be separated at once, and the opium treatment commenced, meat being also given daily, and pepper added to the food. If the disease is not attended to, the bird ultimately acquires a most ungainly gait and attitude: when standing, though lower in stature, the neck and the body are very upright, and as the disease progresses the tail sweeps the ground, and may even come forward between the shanks of the legs."

Crop-bound.—If the feeding be careless, the crop may become so distended with hard grain, that when *swelled* afterwards by the moist secretions intended to assist digestion, the outlet into the stomach is hopelessly closed by the pressure. With patience, an operation is seldom necessary; but some warm water should be poured down the throat, after which the distended viscus is to be gently and patiently kneaded with the hands for an hour or more if needful. However hard at first, it will generally yield and become soft after a time; and when relaxed, a dessert-spoonful of castor-oil should be given, and the bird left in an empty pen. Usually there will be no further difficulty, but the fowl so affected must be fed sparingly for several days, to *allow the organ to contract*, otherwise a permanent distension may result, which indeed is sometimes the case after the greatest care, but beyond being unsightly causes little injury to the bird.

If such palliative means fail, an incision must be made near the top of the crop. "Let the bird be laid on its back, gently remove some of the feathers from the crop, and select a spot for your incision free from any large vessels, which if cut through will cause troublesome bleeding, and weaken the bird. The incision in most cases should be an inch long. The handle or bowl of a very small tea-spoon is convenient to remove the contents; and the best plan is to remove every-

thing, and then to pass the finger (greased, and the nail pared smooth) into the crop, and to feel the outlet. It is quite possible that a bit of bone or other matter may be the cause of obstruction; and if this is left, the operation will be useless. Then have what is called a glover's needle ready, charged with *horsehair*, and put four or five stitches into the inner membrane, drawing it carefully and closely together, and at least three stitches in the outer skin. Place the stitches in the outer skin in such a position that they may be between the inner stitches, as shown in Fig. 54. Take special care not to sew up the two skins together, as it is almost certainly fatal. Feed subsequently on sopped bread not very moist, and do not allow the bird water for twenty-four hours, as it is apt to find its way through the wound, and delay, if not prevent, the healing. There is not the slightest necessity to remove the horsehair subsequently. The operation should not be delayed if the other measures do not succeed in forty-eight hours, as delay adds to the danger; and a sour horrible stench from the bird's mouth is a plain indication in favour of operating at once."

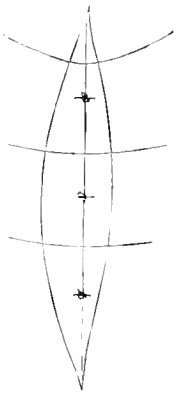


Fig. 54.

CROP, SOFT OR SWELLED.—There is another form of distension of the same organ, in which the contents are of a soft or fluid character. The usual cause we believe to be excessive drinking after thirst, by which the inner coats lose their "tone" and are unable to contract properly on the food—so that in some cases the organ remains distended even with air. We have had only moderate success in treating this complaint when left for any time unnoticed; but recent cases may generally be mastered with careful treatment. Put the bird by itself, and feed it three times a day with a very *small* portion of soft food thoroughly cooked; allowing it to drink moderately after each meal only water slightly acidulated with nitric acid, but not leaving the fountain in the pen. The food should be seasoned with some such mixture as the No. 4, page 141, and half a tea-spoonful of sal-volatile be given in double the quantity of water every morning. This constant care is the only means of saving the bird. Chopped onions or garlic will be the best green food in such cases, and have been found of themselves to have a strong remedial effect.

DEBILITY.—It sometimes happens that fowls droop without any apparent positive disease; evidently suffering from prostration or want of "tone," having little appetite, and getting more and more out of condition generally. The most usual cause is over-showing, causing a greater strain on the nervous energies than the bird can withstand; but any severe "shock" may have the same effect, and we have known it produced in a fine bird by the excessive terror caused by the sudden appearance of a large mastiff in the yard. In some cases birds have been prostrated by exhibition, past recovery, but are usually amenable to judicious treatment.

Strong tonics are not advisable; but the administration twice daily of half a tea-spoonful of "Parrish's Chemical Food," mixed with a whole spoonful of water, changed every alternate or third week for a tea-spoonful twice daily (also with a spoonful of water) of any ordinary quinine and iron mixture, will be usually followed by rapid improvement. A raw new-laid egg should also be "slipped" down the bird's throat every day till the strength and appetite appear to be returning, when it is best to change it for a little cooked meat, and leave off all tonic except the chemical food, or a little tincture of muriate of iron in the water.

We knew a case in which a fancier was presented with a magnificent Dorking cock, but apparently gone past recovery *somehow*, though what was the matter nobody knew. His man at first literally had to "keep the bird alive" by breaking raw eggs down his throat, three or four daily.

After a while he would eat small bits of flesh meat, and by degrees other food; and ultimately carried off the honours in a class of more than forty entries. Of the great value of raw eggs thus used in cases of marked debility, we have had knowledge on many occasions.

Diarrhœa.—This affection may be caused by any sudden change in diet or even of weather, and hence is rather common. If the looseness be observed early, it can be checked at once in most cases by giving a meal or two of well-boiled rice dredged over with finely-powdered chalk. If this be ineffectual, six drops of camphorated spirit may be given thrice daily on a pill of barley-meal, restricting the diet to boiled rice, barley-meal, and barley alone, with only a little *cut* grass daily; or a prescription may be administered, as given by Mr. Tegetmeier many years ago, of five grains chalk, five grains rhubarb, and three grains cayenne pepper, made into a bolus or pill. In very severe cases we would add half a grain of opium to the pill, giving one morning and evening. The bone-dust spoken of at page 139 is an excellent preventive of diarrhœa.

Dysentery.—This disease is really diarrhœa developed to the "desperate" stage, as evidenced by the evacuations being mingled with blood. It is rarely cured; but promising results have attended the administration in any simple form of five drops of laudanum and five drops of M'Dougall's Fluid Carbolate every three hours.

In some cases dysentery appears to become epidemic, as in the following case in the experience of Mr. Hinton. "It was my misfortune, possibly my fault, when in Wales, to lose a great number of birds under conditions which appeared to me more like dysentery than anything else. The disease occurred *only* in the laying hens, and in every case it was speedily and rapidly fatal. I then kept Silver-spangled Hamburghs, Cochins, Brahmas, and Dorkings; to the best of my recollection all had access to the yard (a common run), where the first carcase was hung up in order to be fly-blown, and some of each breed succumbed. The Hamburghs belonged to a friend, and had not long reached me. When I left home in the morning they appeared perfectly healthy; at one o'clock, when I returned, I found one lying on the ground, and apparently unable to move, but with face lively and expression good. The bird occasionally made a straining effort, and there was some blood at the vent; but no egg was passing. She died the same night. This was the first victim, and was, as I have said, hung up. Within a short time another was seized, and was found in the nest straining, with the same discharge. This case was as speedily fatal, and in all I must have lost ten or a dozen. Now in all these cases there was found, on post-mortem examination, distinct disease of the rectum (the last inch or more of the intestine); the tissues were completely softened through, and of pale colour, so that with the handle of the knife it was most easy to make a hole; whilst in the worst cases this appeared to have been already accomplished by the disease itself. I came to the conclusion that the disease was contagious, and I can only advise any breeder to bury the carcase of a similar case deeply, well covered with carbolate of lime."

Egg-bound.—The inability to lay on account of unusual size of the egg is of by no means rare occurrence. The most usual symptom is that the hen, after going as usual to the nest and remaining some time, comes off without having laid, and walks slowly about, often—especially in Polish—with the wings hanging down on the ground, and evidently in distress; but sometimes they remain on the nest. Often a full dose of castor-oil and a handful of groundsel will give relief in a few hours; if not, a small flexible syringe should be passed up the oviduct till it meets the egg, but taking care not to fracture it, and an ounce of olive-oil injected. This is both safer

and more effectual than passing up an oiled feather, but the latter plan may be adopted if a syringe is not at hand. Fomentation of the vent with hot water before applying the oil is also beneficial, by relaxing the tissues. Care must be taken to handle the bird gently, as breakage of the egg is generally fatal, though by no means always so, as is sometimes stated.

We have known the passage enclosing the egg to appear externally, have seen a rupture in it take place, and the egg pass through it; this happened in a Minorca fowl. In case of such an accident—not necessarily fatal—egg production must be totally arrested. Give a pill containing one grain of calomel, one-twelfth of a grain of tartar emetic, and one-quarter of a grain of opium, every four hours; the *first* pill having the calomel and opium doubled with advantage. Put the bird on soft unstimulating diet.

ELEPHANTIASIS.—This name has been lately given to the disease known as "scaly legs," or the development of a rough unsightly scurf on the shanks. We believe it never occurs except in the case of Asiatic breeds, or those formed, as the Leghorn, by crossing from them; and the most subject of all to the affection is the White Cochin. In Buffs also it is not unfrequent; in Partridge more rare, and in Brahmas very rare indeed. We once saw a mass on the legs of an old Cochin hen nearly an inch thick.

Without affirming that it is the *only* cause, we can safely say that diligent inquiry has demonstrated beyond a doubt a close connection between this disease and sudden exposure to *cold* wet, and most especially walking in snow. The much greater development of the affection in America, where the extremes of climate are so much greater, is, so far as it goes, confirmatory of this view; but there are probably other predisposing causes as well.

The disease is almost always capable of cure, if taken at a reasonably early stage. A *dry* and moderately warm domicile must be provided, after which the first thing will be a *vigorous* scrubbing with soap and tepid water, by means of a hard nail-brush. This will remove a great deal of the scurf, after which all the affected parts must be anointed with ordinary sulphur ointment, scrubbing with a brush and freshly anointing every day. A weak solution of sugar of lead may be used as a lotion in the morning with advantage, applying the ointment in the evening. Half a tea-spoonful of powdered sulphur may also be given internally, and cure is usually effected in from one to two weeks. In very slight cases, it is often sufficient to apply glycerine, especially when first observed in young chickens. The ointment of cocoa-nut oil and turmeric, mentioned under "Eruptions," is also an excellent application.

We believe some strains have a hereditary tendency to this disgusting disease, and would get rid of such as soon as convenient; or at least throw in a strong cross of healthier blood, and adopt steady tonic treatment, with a view to eradicate the scrofulous tendency. It is probably also contagious to some extent.

ERUPTIONS.—Cochins especially, if not copiously supplied with green food, are liable to an eruption called "white-comb," consisting of a whitish scurf or efflorescence, which if not checked extends down the neck and causes the loss of feathers so far as it extends. Fowls kept in small or dirty yards may also acquire a scurfy skin, partaking of the same character. The treatment of all is similar. Green food must be supplied, and cleanliness attended to; while the parts are dressed with tar and sulphur ointment, or with a unguent compound of cocoa-nut oil, one ounce; turmeric, in powder, quarter of an ounce. In true "white comb" the last is a specific. The internal treatment will consist of a dose of castor-oil at commencement, followed by a teaspoonful of powdered sulphur daily in the food for ten days, by which time a cure will generally be effected.

chiefly found in Asiatic breeds. The bird should be removed to a warm dry place, and given a dose of jalap or calomel to open the bowels, after which a half-grain pill of extract of colchicum should be administered twice a day. The legs and joints may be well rubbed with sweet oil daily with benefit.

Indigestion.—This may occur from the injudicious use of spiced food, over-feeding in any way, or any other neglect of the rules of wholesome diet. The bird walks lazily about, with little appetite, and will hardly touch ordinary food, while the droppings are scanty and unhealthy in character. The immediate cause may vary; the liver may be sluggish, or the stomach may be inflamed, or the system may be simply debilitated; but in all cases where, from carelessness in diet and the symptoms, there appears cause to suspect that it is the digestive organs which are in fault, the treatment will be much the same, and will consist in the daily administration of five grains of rhubarb, changed every fourth day for one grain of calomel, and the rigid restriction of the diet to a small portion twice daily of soft food, *well cooked*. Water must not be left, but only allowed in moderation immediately after eating; but a little fresh grass cut into chaff may be thrown down several times a day.

Leg-Weakness.—This is a very frequent affection in cockerels of the large breeds, being evidently caused by outgrowing the strength. It may arise either from muscular weakness or from a deficiency of bony matter; and the symptoms, which usually manifest themselves between the ages of three and six months, consist of a more or less constant squatting on the ground instead of standing or walking. Where the weakness is caused by want of bony matter, evidence will probably be found in a disposition to knock-knees, or perhaps a crooked breast-bone.

The free use of bone-dust, as already recommended, is almost a preventive of this affection, and on that ground alone is strongly to be advised; but cure is not difficult in most cases. Either form may be successfully treated by the following prescription, for which we were in the main indebted some years ago to Mr. Hinton, but added the quinine ourselves, with evident benefit:—

Sulphate of Iron	1 grain.
Strychnine	$\frac{1}{10}$,,
Phosphate of Lime	5 ,,
Sulphate of Quinine	$\frac{1}{2}$,,

To be made into a pill, and administered three times daily, morning, noon, and night. Under this treatment strength will rapidly return, and after a week or two the prescription should be changed for "Parrish's Chemical Food," given in the water, say a table-spoonful to each pint, or half a tea-spoonful in twice its bulk of water, morning and evening.

If observed at an early stage we should prefer to commence with the Chemical Food, and use no other medicine. We have no hesitation in speaking of this as *the most valuable tonic we know*, where time can be given for its operation. It is also a most valuable aid, and very effective, in invigorating the constitutions of weakly breeds, such as Spanish or Dorkings, the effect being very marked; and altogether we are acquainted with no preparation which is so literally *invaluable* in the rearing of any high-bred stock. As an instance of this, we may add that a friend to whom we had recommended it for his fowls was so pleased with its effect that he again "passed it on" to another who bred dogs, and who was equally loud in his praises of the syrup as an aid in rearing *his* particular favourites.

LICE.—In other parts of this work we have stated how insect vermin of any kind may be kept from a yard generally; but it may happen that individual birds or especially broods of young chickens are so infested that *personal* measures are necessary for relief. When small chickens droop *without apparent cause*, lice may always be suspected; and it is remarkable that Asiatic breeds rarely suffer in this way, the feathers growing so late that the little pests have not sufficient harbour.

Relief can be given immediately. Put some oil in a saucer, and taking up every chicken in turn, put some with the tip of the finger on the poll, at the back of the neck, under the wings, and here and there about the body. Then for the hen: make some carbolic scouring soap into very stiff suds, and with a shaving-brush, or some such implement, put this here and there about the hen's breast and under her wings—in fact, "spot" her with it, under the feathers and down to the skin, all about her body, but not enough to wet all her plumage. The cooping-ground and sleeping-place should also be well sprinkled with carbolic disinfecting powder, and there will be no more trouble. The scattering of the powder from a dredger in the nest and about the sleeping-place will prevent any need for other measures.

LIVER DISEASE.—If neglected, mere indigestion may extend to serious enlargement or other disorder of the liver; and we have known many cases, in particular, where owing to the indiscriminate use of wet custard for chickens, already so strongly condemned by us, this viscus has been permanently injured. Nothing can be done beyond giving a grain of calomel every other day, and feeding as directed for indigestion; but if the liver be seriously enlarged, little improvement can ensue. A sickly yellowish look about the head and comb is the best symptom of this complaint; and in cases not too long established there is no doubt of at least a partial cure being effected: but we should always dread breeding from birds whose constitution had been thus contaminated.

"In cold and damp localities Cochins especially are liable to what I believe to be strumous disease of the liver. In these cases, the fowl will lose flesh and have a sickly appearance about the head; such birds will often die suddenly from the rupture of a large blood-vessel in the neighbourhood of the liver. The cavity of the bowels will be found full of blood, the liver very soft and easily broken down, and most probably pieces of cheesy matter in its substance, varying in size from a millet seed to a horse-bean. Here also alterative doses of mercury, followed by cod liver oil and Parrish's Food, offer the greatest prospect of recovery; but when the morbid structures are any size, we cannot expect much success. I have not seen this disease in dry and warmer regions.—J. H."

MOULTING we have spoken of in discussing the general treatment of fowls.

PARALYSIS.—See *Apoplexy*.

PIP.—We do not regard the hard and horny appearance which often appears at the end of a sick fowl's tongue, and goes by this name, as any disease whatever. It rather arises from obstruction in the nostrils, causing the bird to breathe through its mouth, and thus *drying* the tongue; or, where there is any real affection, is analagous to a "foul tongue" in human beings. In the latter case a dose of aperient medicine may be given, and chlorinated soda applied to the part with benefit, removing any scale or crust which will come off without difficulty or giving pain to the bird, before making the application.

Rheumatism.—The symptoms of this disease are an evident weakness of the legs, stiffness in the joints, or contraction of the toes. One or more of these may also be caused from cramp; but as both demand similar treatment, it is not very necessary to be particular in the diagnosis. The disease is easily distinguished from leg-weakness by the fact that the latter occurs only in young birds, and presents no symptoms beyond mere want of muscular power.

The bird must be put in a warm and dry place, and fed with warm and rather stimulating food. In the evening it may be put in a basket by the fire, and the legs should be bathed in rather hot water containing some mustard, well rubbing the shanks whilst in the bath, and afterwards carefully drying. Internally, half a grain of opium is to be administered twice daily. Recovery will chiefly depend upon patience and regularity in these daily remedial measures. A little cooked meat given every day is of great benefit, and so are minute doses of oil of mustard, which in some cases have been of marked efficacy.

Roup.—This formidable disease is now less dreaded than it was. Formerly, when fowls were kept in close and ill-ventilated houses, fed on grain, and sent to shows in wicker baskets, it was the scourge of the poultry-yard; but as knowledge increased, roomy houses were built, baskets were lined with some material to stop the cold draughts on journeys, and warm soft food judiciously given; and with these roup ceased to be a terror, in spite of the undoubted fact that it is most highly contagious. Of this there can be no doubt, the germs of the disease being communicated in any way—by drinking or other contact—through the characteristic roupy discharge.

The symptoms are those of catarrh or cold in a very aggravated form, with general feverishness, wasting, and a fœtid, rather thick discharge from the nostrils. These last often become so clogged with it that it fills the eyes, and if neglected may entirely close those organs, and, then collecting, form a cheesy mass as large as a walnut. This swelling may require to be opened, and the cheesy matter extracted, but usually, bathing patiently with warm water will open the lids and allow of its removal without operation. Death usually occurs in from three to eight days from the *specific* symptoms appearing.

The only diseases which can be mistaken for roup are cold—which if neglected often indeed passes into roup, but is not difficult of distinction—and canker or ulceration. So long as the discharge remains thin, watery, and quite devoid of odour, there is usually nothing beyond severe cold; but if it thickens and becomes offensive, the *general* health also suffering, roup has supervened. Cases of mere cold may be so severe as to be fatal, and we have seen true roup of a very mild character; but as a general rule, if not treated, a bird really affected with roup dies.

The treatment we advise has rarely been known to fail, having been chiefly developed by experienced fanciers in America, where the climate is more severe and cases far more numerous than in England, and since confirmed by systematic experiment. The bird is *at once* to be isolated, and for fear of contagion the water-vessel used by the fowls which have been in company should be disinfected with M'Dougall's Fluid Carbolate, and refilled with water in which one spoonful of carbolate has been mixed with each gallon of water. The fowl itself must be put in a moderately warm place, *perfectly* dry and free from draught, and, if possible, with a good sand bottom. The treatment will commence with a spoonful of castor-oil, washing the nostrils, eyes, and other affected parts with the preparation known to druggists as Labarraque's Solution of Chlorinated Soda, diluted with twice its bulk of water. If the discharge be copious, this is to be repeated several times a day; and when it is excessive in quantity the pure solution should be injected into the nostrils by inserting the point of a small syringe into the slit in the roof of the mouth, and turning it rather to the outside for each nostril: this will however be seldom required if taken in time,

The diet to consist of good barley-meal, given warm, and slightly seasoned with cayenne; and the drinking water to have a drop or two of M'Dougall's Fluid Carbolate mingled with it. The best medicine, to commence a few hours after the oil, is a copaiba capsule given twice a day; but if it be necessary to prepare these specially, they will be better as follows:—

Balsam Copaiba	1 ounce.
Liquorice, in Powder	½ ,,
Piperine	1 drachm.

To be divided into sixty doses, each enclosed in a gelatine capsule; or if this cannot be done, adding enough magnesia to make the mass into solid pills: in either case giving one morning and evening. About the third day another dose of oil, or instead thereof two grains of calomel for a large or one for a small bird should be given, if necessary; but improvement under this treatment is generally so rapid that there may probably be no need for a second purgative. The copaiba and chlorinated soda appear, in fact, to exert an almost specific action upon the roup secretion, and unless very far gone, recovery may almost be counted upon.

In very aggravated cases of roup the entire throat is sometimes filled with the diseased secretion, in the form of a plug, so that the bird is strangled.* If the throat be at all affected, the solution (pure) should be applied with a camel-hair pencil, first removing with any convenient instrument as much of the secretion as possible. Chlorinated soda has long been thus used in roup by the more scientific American fanciers, with marked success; and in a special paper on the subject, Dr. Kunze, of New York, reports that a large mass of the secretion placed in the solution was speedily entirely dissolved, which was not the case even by the strongest acetic acid.

A fowl which has been cured of roup should be secluded for a few days after recovery, and have a last wash with the chlorinated soda before returning to its companions. Care should also be taken to avoid sudden exposure in cold or wet weather, but a fine genial day be chosen for making the restoration.

SCALY LEGS.—See *Elephantiasis.*

SOFT EGGS.—If these occur frequently it is almost always a sign of over-feeding. Where the egg is tolerably complete, all but the shell, it will be enough to miss one meal and thenceforth give less; but if the outer membrane be absent, and still more if yolks only be dropped, the prescription given under the head of "Egg-bound" should be administered, and the bird fed very sparingly on mashed potatoes only, in order to stop laying till the system be sufficiently reduced.

In some cases soft eggs occur from the entire absence of any materials to form the shell. The remedy for such is of course obvious, and consists in the supply of old mortar, burnt oyster-shell pounded, or similar ingredients. If none of these are at hand, lime-water will be sufficient. Indeed, in all such cases it is as well to give lime-water for drink, which is easily prepared by putting a piece of lime in several gallons of water, and giving it an occasional stir for twenty-four hours. The water will not dissolve more lime than is beneficial in the case considered.

ULCERATION.—Under the name of "canker" has frequently been described an affection for which the heading we have chosen is every way a far more correct title. It usually occurs about the head, commencing with a watery discharge from the eyes, which by degrees becomes of a firmer character, and assumes an offensive odour, the nostrils being at first unaffected. The disease

* These cases strongly resemble the disease known as canker or ulceration; but as the treatment is very similar, this need occasion little anxiety.

frequently extends to the throat, covering the back of the tongue with ulcerous formation, and sometimes entirely filling the glottis and larynx with the diseased secretion, and killing the fowl by actual suffocation, as in the most aggravated cases of roup; to which disease in some particulars it bears a striking analogy. Other mucous surfaces are also liable to such diseased action, the exciting causes of which we believe to be either severe cold or local irritation.

There are two remedies, both of which appear to exert a most marked effect upon these tiresome affections, and may be employed at discretion: viz., Labarraque's Solution of Chlorinated Soda, and M'Dougall's Fluid Carbolate. For canker of the head we should prefer to commence at least with the chlorinated soda, washing the outside and eyes with a dilution containing four parts water to one of solution, and "swabbing" the throat and tongue, if these parts be affected, with the solution in full strength. This is to be repeated three times a day, also mixing about a tea-spoonful of powdered sulphur in each feed. If marked benefit do not appear within a few days, which is seldom the case, we would resort to the fluid carbolate, using for the eyes one tea-spoonful to eight of water, and for other parts diluting the preparation with thrice its bulk. The carbolate, besides its disinfecting and healing properties, has a strong astringent effect, which makes it preferable in some instances; but we can say without hesitation that there are very few cases which do not yield in due time to one or the other of these admirable preparations, which are applicable to any diseased secretion whatever, with very little risk of injury.

White-Comb.—See *Eruptions.*

Wry-tail.—This deformity is in many cases owing to spinal causes, and in all such should be ruthlessly stamped out, being *strongly* hereditary and sure evidence of a weakly constitution. But instances occur in which it is more analagous to squinting in the human subject, being caused by a slight inequality of the muscles or tendons on each side; and, like squinting, can often be cured by a simple operation, for the details of which we are indebted to Mr. Hinton.

In very slight cases there seems little more than a constant *habit* of carrying the tail to one side, and in these, quoting the gentleman to whom we have already referred, "it is often sufficient to make a scar on the *opposite* side, either by snipping out a bit of skin with a pair of scissors, or destroying it by rubbing a wetted stick of nitrate of silver (lunar caustic) over the part. The scar or eschar, whichever way produced, should be about half an inch in length by less than a quarter of an inch in width, the greatest length being in a downward direction; and the position is at the junction of the projecting portion from which the tail springs with the body. In the annexed diagram (Fig. 56) the place is clearly shown at *a* or *b*. If the tail be moved from side to side the joint will be found, and it is there that the operation must be performed.

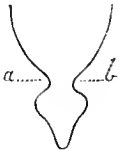


Fig. 56.

"The *contraction* of the scar or eschar will very probably effect a cure; but if not, and it be still concluded the case is unconnected with *spinal* deformity—the knife in the neighbourhood of the throat, freely dividing the large vessels, is the only cure for *this* form!—the finger should be placed in the angle on the affected side, while the tail is forcibly drawn in the opposite direction. If this is done several times, it is probable that under the finger a tight cord or tendon will be felt, and this will have to be divided. This operation must be performed with a sharp narrow-bladed knife, inserted under the cord without cutting the skin farther than just the point where the knife enters; and should there be bleeding, pressure on the aperture with the finger will control it. After a week the tail should be moved daily to the opposite side, and manipulated till it assumes the proper position.

"A similar operation may be performed for 'squirrel-tail' (the tail pointing forward over the back), but in this case the cord to be cut will be found on the top instead of at the side."

This matter opens up, as Mr. Hinton very justly remarks, the whole question of how far it is *justifiable* to meddle with "exhibition birds." If we may thus surgically remove a tendency to wry-tail, why not manipulate a comb or excise an extra toe? Why not even *paint* a bird? We confess the point is not clear, and while we endeavour in this work to give the fancier every assistance possible, we are not sure our conscience, any more than Mr. Hinton's, would be quite at ease did we win a prize with a bird "assisted" in the manner we have described. Still, we think it can be shown that there is *some* difference between the case now supposed and the others named. They are actually wrong formations, whether of members or of plumage, and are hereditary; whereas the fault in mere carriage of a member is more akin to some awkwardness in gait, and, as we can testify after breeding from such cases without even the attempt to remedy them, have no particular tendency, so far as we have observed, to perpetuate themselves. They seem to belong to the individual bird, and, once corrected, are "permanent improvements." A bad-combed or foul-coloured bird breeds similar, or worse; but the wry-tailed (of course we speak of cases where the spine is not affected) does not, except in perhaps a few instances. It is, in fact, like an operation for squinting; which affection in man, when thus curable, is not as a rule hereditary. With these remarks we must leave the question of practical morality, and his own course as determined by the answer given to it, to the individual judgment of the reader.

Deformities connected with the median line are more frequently found in Malays and Polish than any other breeds.

Mr. Hinton concludes his revision with the following remarks, which deserve to be well considered:—"In the case of young growing stock, unless the bird is otherwise *very* promising, I would strongly advise the knife as the best means of cure. If our arrangements as to feeding, &c., be right, it will, as already said, be generally the weakest that suffer, and the amateur breeder should count the cost. Remember that two or three weeks' illness in a young and growing chick is a most serious diminisher of size, weight, and carriage, and may reduce the most promising cockerel of the run to one of very inferior appearance, while it is certain deterioration to breed from weakly stock; and in the case of any contagious disease, I believe I have often stamped it out by death on discovery." The danger of infection, however, we may remark, is much less than formerly, as the introduction of carbolic acid and its preparations has given a power of controlling these perils which before was unknown.

It is often advisable to *dissect* fowls which have perished from disease, in order to ascertain if possible the cause of death. We have known so little in our own yard of such cases, in spite of the small space (sixty-seven by thirty-five feet) which alone for some years was at our command, that we confess our actual experience in this line has been very limited. We may however remark that the fowl should be entirely *plucked* before any extended dissection is attempted, and should also be entirely cold, or blood may flow and hinder observation as to the *colour* of the tissues, which is in many cases a very important point in determining the nature of the disease.

The opposite illustration (Fig. 57) has been copied, by the kind permission of Professor Owen from a plate in his "Descriptive and Illustrated Catalogue of the Physiological Series in the Museum of the Royal College of Surgeons," and accurately represents the relative position of the principal viscera in a young cock. We give it as affording useful assistance in dissection to amateurs. The proper references to the various organs are subjoined.

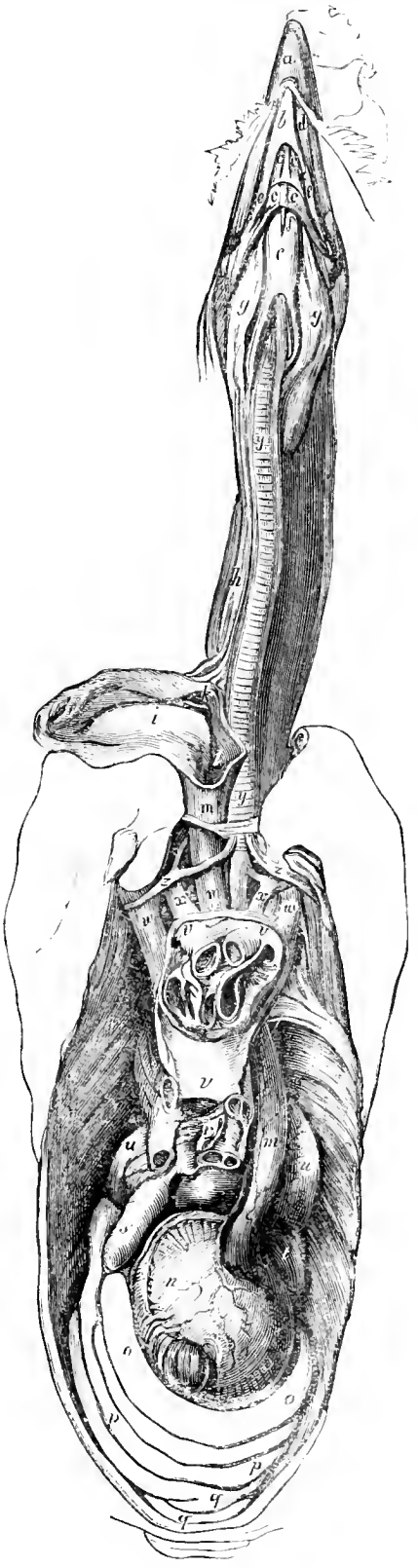


Fig. 57.

REFERENCES.

a The under beak.

b Membrane of the mouth at the side of the tongue.

c Muscles of the tongue (*os hyoides*) and lower jaw.

d A thin salivary gland, entering the mouth by several small orifices

e A small salivary gland, whose duct passes through the membrane of the mouth at the side of the tongue—the right one is turned outwards to show these ducts.

f A small cartilage belonging to the *os hyoides*.

g The fauces.

h The œsophagus, above the crop.

i The crop laid open.

k The upper orifice into the crop.

l The lower orifice.

m The lower œsophagus.

n The gizzard.

o First turn of the duodenum.

p Second turn of ditto.

q The other intestines.

r The basis of the liver, the body of it being cut out to show the six orifices of the *vena cava hepatica* and *vena portarum*.

s The gall bladder.

t The spleen.

u The two testicles.

v Attachment of the pericardium, within which is seen the heart, exposing the mouths of the vessels coming in and going out.

w The *venæ cavæ superiores*.

x The two carotids and subclavians.

y The trachea.

z Suspensory muscles of the trachea.

We may remark, in conclusion, that the following will be a useful list of remedies to be kept on hand, and will furnish a tolerably complete MEDICINE CHEST, capable of treating most of the acute complaints usually met with. Calomel, in one and two-grain pills; opium, in half-grain and grain pills; the chalk and rhubarb pills as given at page 191, for diarrhœa; a small supply of cayenne pepper; the same of jalap; and a bottle each of camphorated spirit, M'Dougall's Fluid Carbolate, chlorinated soda (Labarraque's formula), mother tincture of aconite (for colds), and castor-oil; a small phial of laudanum should also be added. The other remedies named in this chapter are chiefly needed for more chronic complaints, the nature of which gives ample time to procure them as required; but the foregoing list may occasionally save precious time in treating cases which depend almost entirely on *promptness* in dealing with the first marked symptoms of the attack.

Sick fowls should always be secluded, unless in very trifling ailments. By so doing, not only is danger of contagion avoided, but the birds have a much better chance of recovery, as if at large they are generally bullied by their companions; moreover, special treatment cannot be adopted while birds are left in the run. Some persons use poultry-baskets as hospitals, and they will do, if rigidly confined to such purposes, but must *never* afterwards be used to transmit healthy fowls. At best they are too dark and confined, and a few pens about three feet square are much preferable in every way. They can also be readily disinfected after use, and thus be employed when not wanted for hospital use, in preparing fowls for exhibition. The pens we have already advised for the latter object, with this precaution, may thus be made available for both purposes.

CHAPTER XVII.

TECHNICAL TERMS.

BEFORE proceeding to the detailed description of the various breeds, and practical notes on their breeding and management, it will be well to provide for the beginner a competent knowledge of the various technical terms as employed by fanciers. With the aid of the illustration on the following page, this will readily be acquired from the accompanying glossary. We have included a few words not perhaps absolutely necessary; but for obvious reasons it is convenient to have collected together a list of the chief terms in constant use amongst poultry amateurs.

Beard.—A bunch of feathers under the throat of some breeds, as Houdans or Polish.

Breed.—Any variety of fowl presenting distinct characteristics.

Brood.—The family of chickens under care of one hen.

Broody.—Desiring to sit or incubate.

Carriage.—The bearing, attitude, or "style" of a bird.

Carunculated.—Covered with fleshy protuberances, as on the neck of a turkey-cock.

Chick.—A newly-hatched fowl. Used only till a few weeks old.

Chicken.—This word is often applied to any age indefinitely until twelve months old.

Clutch.—This term is applied both to the batch of *eggs* sat upon by a fowl, and also to the brood of chickens hatched therefrom.

Cockerel.—A young cock.

Comb.—The red protuberance on the top of a fowl's head. (No. 1, see Plate).

Condition.—The state of the fowl as regards health and beauty of plumage—the latter especially.

Crest.—A crown or tuft of feathers on the head. The same as Top-knot.

Crop.—The bag or receptacle in which food is stored before digestion. Can be easily felt in any fowl after feeding.

Cushion.—The mass of feathers over the tail-end of a hen's back, covering the tail; chiefly developed in Cochins.

Deaf-ears.—The folds of skin hanging from the true ears: same as Ear-lobes. They vary in colour, being blue, white, cream-coloured, or red. (No. 4)

Dubbing.—Cutting off the comb, wattles, &c., so as to leave the head smooth and clean.

Ear-lobes.—Same as Deaf-ears.

Face.—The bare skin round the eye. (No 2.)

Flights.—The primary feathers of the wing, used in flying, but tucked under the wing out of sight when at rest. (No. 16.)

Fluff.—Soft downy feathers about the thighs, chiefly developed in Asiatics.

Furnished.—Assumed the full characters. When a cockerel has obtained his full tail, comb, hackles, &c., as if adult, he is said to be "furnished."

Gills.—This term is often applied to the wattles, and sometimes more indefinitely to the whole region of the throat.

Hackles.—The peculiar narrow feathers on the neck of fowls, also found in the saddle of the cock. In the latter case they are called "saddle" hackles or feathers; hackles alone always referring to the neck-feathers. (No. 5.)

Hen-feathered, or Henny.—Resembling a hen in the absence of sickles or hackle-feathers, and in plumage generally.

Hock.—The knee or elbow-joint of the leg. (No. 19.)

Keel.—A word sometimes used to denote the breast-bone.

Leg.—In a live fowl this is the scaly part, or shank. In a bird dressed for table, on the contrary, the term refers, as is well known, to the joints above.

Leg-feathers.—The feathers projecting from the outer side of the shanks in some breeds, as Cochins.

Mossy.—Confused or indistinct in marking.

Pea-comb.—A triple comb, resembling three small combs in one, the middle being the highest.

Pencilling.—Small markings or stripes over a feather. These may run either straight across, as in Hamburghs, or in a crescentic form, as in Partridge Cochins.

Poult.—A young turkey.

Primaries.—The flight-feathers of the wings, hidden when the wing is closed, being tucked under the visible wing composed of the "secondary" feathers. Usually the primaries contain the deepest colour all over the body, except the tail, and great importance is attached to their colour by breeders.

Pullet.—A young hen. The term is not properly applicable after December 31 of the year in which a bird is hatched, though often used during the early months of the next year.

Rooster.—An American term for a cock.

Saddle.—The posterior part of the back, reaching to the tail, in a cock, answering to the cushion in a hen; often, however, applied to both sexes, cushion being more restricted to a great development, as in Cochins, while "saddle" may be applied to any breed. (No. 8.)

Secondaries.—The quill-feathers of the wing which *show* when the bird is at rest. (No. 15.)

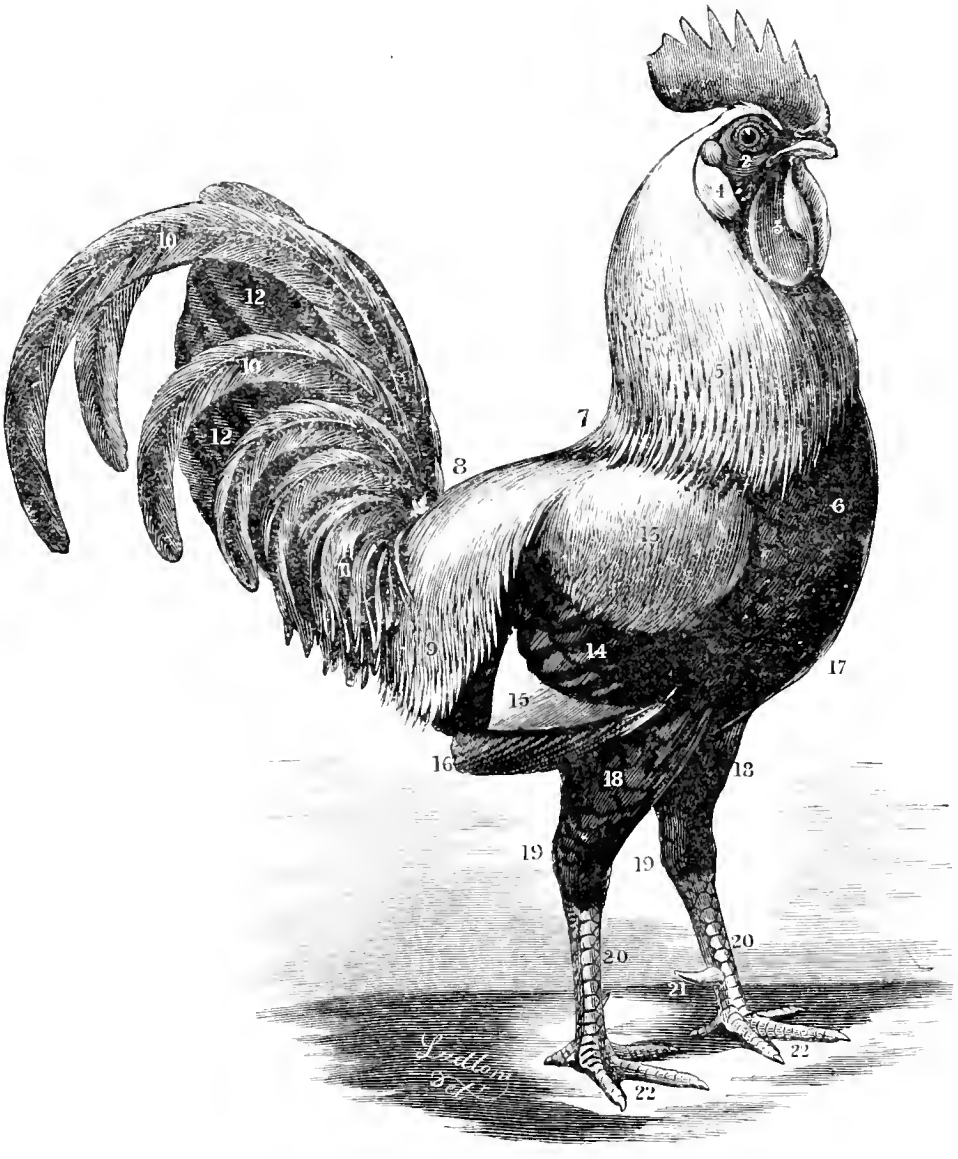


Fig. 58.

REFERENCES.

1. Comb.
2. Face.
3. Wattles.
4. Deaf-ear or Ear-lobe.
5. Hackle.
6. Breast.
7. Back.
8. Saddle.
9. Saddle-hackles.
10. Sickles.
11. Tail-coverts.
12. True Tail-feathers.
13. Wing-bow.
14. Wing-coverts, forming the "bar."
15. Secondaries, lower ends forming the wing or lower butts.
16. Primaries, or flights, not seen when wing is clipped up.
17. Point of breast-bone.
18. Thighs.
19. Hocks.
20. Legs or Shanks.
21. Spur.
22. Toes or Claws.

Self-colour.—A uniform tint over the feather.

Shaft.—The stem or quill of a feather.

Shank.—The scaly part of the leg. (No. 20.)

Sickles.—The top curved feathers of a cock's tail. Properly only applied to the top pair, but sometimes used for one or two pairs below which can hardly be called tail-coverts. (No. 10.)

Spangling.—The marking produced by each feather having one large spot or splash of some colour different to the ground.

Spur.—The sharp offensive weapon on the heel of a cock. (No. 21.)

Squirrel-tailed.—The tail projecting in front of a perpendicular line, over the back.

Stag.—Another term for a young cock, chiefly used by Game fanciers.

Strain.—A race of fowls which, having been carefully bred by one breeder or his successors for years, has acquired an individual character of its own which can be more or less relied upon.

Symmetry.—Perfection of proportion; often confounded with carriage, but quite distinct; as a bird may be nearly perfect in proportion, and yet "carry" himself awkwardly.

Tail-coverts.—The soft, glossy, curved feathers at the sides of the bottom of the tail. Usually the same colour as the tail itself. (No. 11.)

Tail-feathers.—The straight and stiff feathers of the tail only. The top pair are sometimes slightly curved, but they are always nearly if not quite straight, and are contained *inside* the sickles and tail-coverts. (No. 12.)

Thighs.—The joint above the shanks; the first joint clothed with feathers. The same as the drumstick in dressed fowls. (No. 18.)

Top-knot.—Same as Crest.

Trio.—A cock or cockerel, and two hens or pullets.

Under-colour.—The colour of the plumage seen when the surface has been lifted. It chiefly depends on that of the down seen at the root of every feather

Vulture-hock.—Stiff projecting feathers at the hock-joint. The feathers must be both stiff and projecting to be thus truly called and condemned. (See Fig. 59, drawn from a Brahma pullet.)

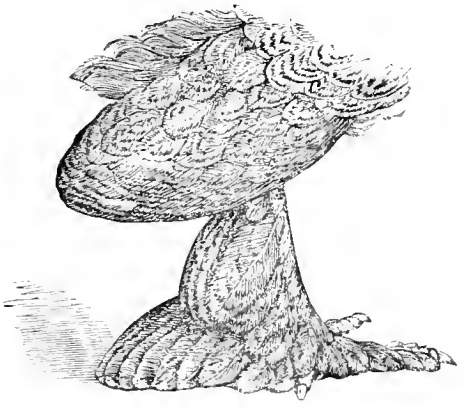


Fig. 59.

Wattles.—The red depending structures at each side of the base of the beak. Chiefly developed in the male sex. (No. 3.)

Web.—This term is indefinite, expressing a flat and thin structure. The web of a feather is the flat or plume portion; the web of the foot, the flat skin between the toes; of the wing, the triangular skin seen when the member is extended.

Wing-bar.—Any line of dark colour across the middle of the wing, caused by the colour or marking of the feathers known as the lower wing-coverts. (No. 14.)

Wing-bow.—The upper or shoulder part of the wing. (No 13.)

Wing-butts.—The corners or ends of the wing. The upper ends are more properly called the shoulder-butts, and are thus termed by Game fanciers. The lower, similarly, are often called the lower butts.

Wing-coverts.—The broad feathers covering the roots of the secondary quills. (No. 14.)

CHAPTER XVIII.

COCHINS.

It is often stated that the origin of this breed, and its first appearance in England, are alike to be traced to some fowls imported in 1843, and which subsequently passed into the possession of Her Majesty, under the name of Cochin China fowls; but from a drawing of these very birds which appeared in the *Illustrated London News* of that date, it is easy to see that they possessed no characters whatever which distinguish Cochins as we now know them, except the yellow legs and the large size. They were *very* long and bare on the leg; the carriage of the head was backward instead of forward; the tails were tolerably abundant (much more so than even the modern Brahma) and carried high; and the back sloped down to the tail instead of rising to it. Add to this that the birds were both narrow and entirely destitute of fluff, and the plumage close and hard instead of soft and downy; and it will be rather hard to conceive the grounds of such an amazing assertion as that 1843 "may be stated as being the period of the first introduction of these remarkable fowls into this country." These early birds, in fact, while combining some of the blood of both, were evidently far more Malay than Cochin in their type, and probably came in reality from the region whose name they bore. They always retained the bare leg, and with hardly an exception had black, or nearly black, eyes.

Later on Her Majesty possessed better specimens, and in 1846 exhibited at the Dublin Cattle Show some fowls which attracted great attention, but were still nearly as far from the true type. It was, in fact, not until 1847 that two English breeders introduced birds which exhibited at least the *essentials* of the Cochin variety as we now have it. All these birds came from China, and almost exclusively from the port of Shanghae; and hence for some time a fruitless controversy was raised as to the proper name, and fruitless attempts made to change their popular designation for the undoubtedly more accurate one of Shanghaes. These attempts were continued later in America than in England; and till a few years ago many United States fanciers were in the habit of calling all feather-legged Cochins by the name of Shanghaes; but even there the attempt has failed, and the recent increased intercourse between the fanciers of the two nations has finally produced uniformity of nomenclature at the expense of accuracy. We not only need the space, but we have not the inclination to go at length, as some have done, into this now useless controversy; the more especially as we have often remarked the curious uniformity with which, in any struggle of facts against a popular name, the *name* is sure to win. It is sufficient to observe that so it was in the case of these birds. Cochins they certainly were not; but Cochins people *would* have them to be, Cochins they became, and Cochins they remain.

The introduction of these fowls, as we have already hinted, was a memorable event in the history of poultry; since they undoubtedly awakened that startling "mania" which was, calmly considered, one of the most curious phenomena of the nineteenth century, and which, after it died away, left behind it an enduring interest in poultry generally, which nothing has since been able to destroy. Scarcely any people at that time kept fowls; and as for the few poultry-shows which

even then timidly endeavoured to attract the attention of a discerning public, they were regarded as the harmless craze of a few weak-minded individuals, looked upon in those days much as a man would be now who should devote his spare time and energies to the cultivation of white mice. But the Cochins came like giants upon the scene; they were seen, and they conquered. The few people who were at first tempted into the shows went home and told with wonder that they had seen fowls "as large as ostriches," which nearly blew off the roof with their awful crow; or, as some affirmed, "roared like the lions in the Zoological Gardens;" but were said withal to be of such a mild and peaceable disposition as never was known, and put the little birds which, according to good Dr. Watts, "in their little nests agree," utterly to shame. This sent in others to see the wonderful fowls, till the shows were crammed, and even the streets leading to them; and still the excitement gathered and grew. The names of Sturgeon, Moody, Punchard, and Andrews, became famous in the land; and Mrs. Herbert bred white birds which have never been since surpassed. Poultry auctions came into fashion; *Punch* himself began to point his jests with allusions to the famous fowls, and people really seemed going mad for Cochins: when, as suddenly as it began, the mania subsided, and people became cool again. But the work was done. It was indeed natural that after such unnatural excitement there should be unusual calm; and for some years after this wonderful outburst of hobbyism poultry-shows rather languished and declined. But the recovery was rapid, though steady; and it is a singular fact that at the present time, without any mania or excitement whatever, there are far more poultry-shows and poultry-keepers than in the hottest days of the "hen-fever," while higher *average* prices are realised than ever, and there never was such a steady and remunerative market for good birds.

Well, therefore, does our Cochin—as we stand before him in his pen—merit at our hands some tribute of respect; well does he deserve such honour as we can show him, by placing him first in our exposition of the various breeds. Besides his own merits and grand proportions, he is the *father of the poultry fancy!* May he never be worse "furnished" than now, and may his shadow never grow less! With these respectful wishes for his welfare, we proceed to the practical consideration of the Cochin as he exists at the present day. In doing so we shall endeavour not only to describe what high-class fowls should be, but *how they may be bred;* which, indeed, throughout these pages will be our aim, and that of the skilled breeders who have placed the results of their experience at our disposal, with a generous confidence which it has been one of our greatest pleasures in preparing this work for the press to have awakened.

The general characteristics of Cochins are so peculiar and distinct fror other fowls, that a short general description will first of all be necessary.

A Cochin cock ought not to weigh less than ten or eleven pounds, and very large specimens range from that weight to as high as fifteen pounds; but the latter weight is very rare, and is generally, according to our observation, accompanied by a clumsy and ungainly carriage, though we have seen some exceptions to this rule. A good Cochin looks larger even than his actual weight, as the plumage is very loose and fluffy, a peculiarity which arises from the feathers being broader across the web, and thinner and weaker in the shaft or quill, than that of other varieties. The comb is single, and should be perfectly upright, free both from twist and any tendency to fall over, with a fine arched outline and neat handsome-looking spikes; both comb, face, deaf-ears, and wattles being as fine in skin or *texture* as possible. This point is greatly valued by fanciers, a rough warty-looking skin being much disliked. The head, which should be carried slightly forward, is rather small and very intelligent-looking; the neck rather short, and very thick and full in the hackle, which should be long enough to flow well over the shoulders and back; the shoulders somewhat square, and very broad across; the breast rather high relatively, but should be prominent,

full, and broad. The back so short as to have hardly any length at all, but wide and flat crossways, and running off almost at once into the saddle. This last is one of the most important points in a Cochin cock; it should be nearly or quite as broad as the back, begin to rise almost from the very base of the neck, and rise more and more gradually towards the tail, forming no angle with the feathers of that member, but a nice, harmonious, continuous line. The body to be short but very deep, and the "fluff" on the thighs standing out as much as possible in a globular form. This and abundant leg-feather form perhaps the second great point in a good Cochin. The hocks ought to be thoroughly well covered with soft curling feathers, but free from stiff projecting quills (vulture-hock); and the shank-feathering heavy, and standing out from the shanks well. The legs to be short, and as wide apart as possible. The tail and wings are also important: the tail of a good Cochin containing hardly any quill, but merely soft and curling feathers; and the small and short wing being clipped close up to the sides, and the points almost buried between the saddle-feathers above and the fluff below. The breed, in common with Brahmas, is peculiarly subject to what is called a "slipped" wing, or the flight-feathers protruded outside the secondaries instead of being nicely tucked under; this fault greatly diminishes both the value and beauty of a bird, and tells heavily in any good competition. The gait is slow, and the carriage quiet and dignified.

The hen is of similar conformation as regards shortness, width, and depth of body, the short neck rather tending forward, the high-carried stern, &c. In her the saddle is exchanged, however, for a still more developed "cushion," almost globular in its fulness of outline, and which, with a similarly developed fluff on thighs, are the chief points in a Cochin hen. The tail is very short, and should *just* peep through the feathers of the cushion. In other points the conformation is similar. In both sexes the toes should be large, straight, and well spread out. All the points described will be found well exemplified in the portraits which illustrate this chapter.

The colours bred in Cochins are various shades in Buff and Cinnamon, Partridge or Grouse, White, Black, and "Cuckoo" colour. There are also Silky Cochins. These we shall now consider in detail.

BUFF COCHINS.—The Buff has always maintained its place as the most popular of the Cochin breeds. In describing its characteristics and breeding, we will give in the first place the full notes with which we have been favoured by Mr. Henry Tomlinson, beyond question the oldest fancier who has continued uninterruptedly the cultivation of this variety down to the present time:—

"In giving my experience in Buff Cochins, I will first give the different points required in a first-class bird. I am quite aware there exists much difference of opinion as to the points of this variety of fowl; but as I still like to see the old style of bird, with the lumpy points that so many consider ugly, I shall endeavour to describe them as nearly as possible according to my own fancy, and perhaps crediting myself with the longest-continued experience, dating my first days among the Cochins twenty years back. It may be worth remark that seeing the first Cochins that ever were exhibited gives me the advantage of knowing what they were then, and what we have arrived at after twenty-three years careful breeding.

"In colour we have several shades in the Buff Cochin cock, and perhaps the most attractive colour in an exhibition pen is what we call *lemon;* I will therefore give first the colour of the Lemon-Buff Cochin cock. The neck, saddle, hackle, and wing and tail-coverts should be as near as possible the colour of a new lemon; the breast-feathers and fluff a pale buff or light cane-colour; flight-feathers of wing also a pale buff or cane-colour, and perfectly free from any streaks or mealiness; the tail-feathers should be light bronze, or buff, rather darker in colour than the

breast-feathers; the foot and leg-feathering same colour as breast, and free from any white or discoloured feathers.

"The next most important colour of cock is the Buff. The neck, saddle, hackle, and wing and tail-coverts should be a bright dark orange; the breast and fluff rich yellow buff; the tail buff or dark bronze, free from any discoloured feathers; the foot and leg-feathering same colour as breast, and free from any discoloured feathers.

"The Silver-Buff cock—a colour much discarded by all judges, therefore very seldom seen, but yet when true in colour one of the handsomest birds bred—is as follows:—The neck, saddle, hackle, and wing and tail-coverts should be a light lemon; the breast and fluff a French white; the tail-feathers light, tipped with orange or light bronze; foot and leg-feathering same colour as breast; flight-feathers of wing a pale buff or light cane-colour.

"These are the three only important colours in cocks. I will now give the colours of hens of each of these varieties.

"The Lemon-Buff hen should be a light cane-colour, uniform shade throughout; feet and leg-feathers and tail should be same colour; the hackle a light lemon. This is perhaps the most fashionable colour.

"The Yellow-Buff hen should be a good rich buff throughout, with hackle rich orange.

"The Silver-Buff hen is a very beautiful bird when perfect in colour. The neck and hackle should be a light golden lemon; the body French white; the tail and wing-flights a light buff or very pale cane-colour; leg and foot feathers same colour as body.

"I have thus briefly described the different colours in both cocks and hens, and will now give the different points required in a high-class bird of each sex.

"In the cock bird size is a most important point to breed for. A full-grown cock bird, say twelve months old, should not be less than from ten to twelve pounds. A Cochin increases in weight till three or four years old, and old cocks from two to three years old will increase to the weight of fourteen or fifteen pounds each; but I maintain that a cock bird weighing twelve or thirteen pounds when two years old is quite heavy enough, and shows in a pen to much greater advantage than a bird heavier. A very high-class bird, with great depth of feather (a great feature in a Cochin), is very deceptive in weight, and I have frequently seen cocks, thick heavy-looking birds, full of feather, weigh much lighter than a close-feathered bird that in a pen does not look so heavy by pounds. A close-feathered bird I very much object to.

"The head should be long, not too thick or coarse; the beak rich yellow; the comb perfectly upright, not too large, and evenly serrated; the ear-lobes prominent and red; the wattles deep; the neck well arched, not too short, and not carried too much back; the shoulders broad and square, and well carried up; the breast full, and broad as possible; the legs set well apart, the more bone and thickness the better, not too long, nor either too short; feet large; toes thick, long, and straight; legs and feet well feathered, and free from any long hock-feathers; the wing small, carried well up, and close, the ends of the flight-feathers closely clipping the sides, so as to be almost invisible. Twisted flight-feathers in the wing, or any of the long flight-feathers not carried well under, are very objectionable. The tail should be as small as possible, free from any long sickle-feathers, and resembling much the style of a plume of feathers. It is rare now in an exhibition pen to see a genuine tail; they are so artistically curled and twisted into shape, and so many feathers pulled out, that an exhibition pen very rarely contains a bird in its natural form.

"In the Cochin hen, also, size is a most important point; for, however good in quality and colour, if under size they are of little use. Hens live to a greater age than cocks, and, as Cochins increase in weight every year, their weight is much heavier in proportion to the cocks. Hens at

one year old should not be less than from eight to nine pounds each; at two years old they will increase in weight to ten or eleven pounds each; and at three or four years old I have had them to weigh nearly twelve pounds each: but hens ten pounds each at two years old are a good average weight, and quite heavy enough. The head should be long, not too thick or coarse; the comb fine, upright, and not too large; breast broad, prominent, and full; shoulders broad and square; the wing small, the under flight-feathers carried well under, and the outer flight-feathers closely clipping the sides; the legs thick as possible, and a good bright yellow, well-feathered, and quite free from any long hock-feathers. The most important point in a Cochin hen is the cushion; in a very high class hen the cushion should be very large and prominent, forming quite a ball on the rump, and hiding the whole of the tail with the exception of the ends of the longest feathers.

"In mating birds for breeding, the information I shall endeavour to give will be such as I have gained myself from many years' practical experience; and I may say—having made it a study how to produce colour, feather, form, and size—by following the few practical hints I shall give, those who wish to breed this most useful variety of fowls will not get very far wrong.

"In commencing to breed Cochins, inexperienced people are very apt to think that by purchasing very moderate birds from some good breeder of a noted strain they may breed as good a bird as if paying high or fancy prices for very high-class specimens. This is not my opinion. To produce high-class birds you must not have a fault in your stock birds; little faults in parent birds develop themselves on a much larger scale in the young stock. I will give an important instance of this. Some years ago I had a very fine strain of cocks, that for quality could not be beaten; but there was a great peculiarity in the comb—the two middle spikes were much shorter than the rest. This defect I never found show itself in the pullets by this cock; but many of the cocks had the same defect as their sire—the combs being precisely like his. Cocks I have always found resemble their sire, and pullets the hen. We have found it very difficult to breed birds perfect in colour and quality from the very best stock that can be put together; and I am quite sure imperfect birds cannot as a rule produce perfect stock. Amateurs who wish to breed Cochins I do not advise to be guided in their purchases by the awards at our different shows, and purchase the prize birds for stock purposes; they must bear in mind that many of the highest class exhibition birds are of no other use than for an exhibition pen. If you can keep birds (Cochins) healthy and lively, the older they are the larger they get, and the more valuable for exhibition. I have had many large high-class exhibition hens that to my knowledge have never laid an egg for the last two or three seasons of their life. Choose your hens from one year old, and not over two years; large, square, heavily-feathered birds, rich buff in colour, not too light, and quite free from any mixture of shades in the colour of feathers, but a decided colour throughout; plenty of width between the legs is a very important point; legs as thick as possible, and a good yellow. The larger your hen in cushion behind, and more prominent her good points, the better; a flat-backed hen, with no *rump*, however beautiful in colour and good in other points, I would not run in my yard for breeding purposes. Be careful also the ear-lobes are not streaked with white; comb as small, fine, and upright as possible; feet large and well feathered; toes thick, long, and straight.

"The cock bird to run with these hens should also be a rich buff, a good sound colour throughout; great care should be taken in not having the under flight-feathers of wing *white or mealy*. I do not object to their being black, but a good rich buff is to be *preferred*; but if white or mealy it is sure to produce mealy-flighted cocks. The wing should be as small as possible, well carried up, and closely *tucked* into the side; a large, long, loose-winged bird scarcely ever carries his wing close, and is very objectionable for stock purposes.

"Do not choose your cock bird too large. If you have all the good points you require, a bird ten or eleven pounds at twelve months old is large enough, and I should not select one of two years old over eleven pounds; but I much prefer breeding from hens two years old and cock one year old.

"There exists much greater difficulty in breeding high-class birds than what there was years ago. This is a great deal owing to the different fancies of our judges. Some fancy one colour and some another; and they have given such a decided preference to the pale lemon buff that often lovely birds of very high-class merit are passed over in favour of very inferior specimens as to quality in other points, solely on account of their very delicate clear colour. In the early days of Cochins, when Sturgeon and Punchard, the earliest and greatest breeders of Buff Cochins, used to show such thick, square, fluffy, grand birds, such birds that we do not see nowadays, most of the hens had pencilled hackles; now if a pencilled-hackled hen is shown, however good in quality, she is passed over by the judges. In trying to obtain that delicate clear colour we have greatly run out of the rich yellow buff, and the different breeders find now that they produce a much larger proportion of inferior-coloured birds, which are mottled in colour, and the cocks with mealy wings. I therefore strongly advise all who wish to breed Buff Cochins, to select their stock birds of a good sound rich buff, but not to approach a dark cinnamon.

"Even if you wish to breed the pale buff, you need not alter your selection in stock birds, for you will be sure to breed them light enough. The greatest difficulty is how to produce the rich yellow buff.

"As to breeding the silver cinnamon, or silver buff, I do not think any of the true strain of this colour exist. They used to be bred very true years ago. I bred them myself some ten years back, and bred till I could not get one in twenty the correct colour. They are very handsome, but most difficult to breed; indeed, I believe it to be now a hopeless task, and, therefore, could not advise the shade of stock birds to produce this colour.

"The importation of Cochin China fowls into this country we have much to be thankful for, as it has been the means of enabling those who never could keep fowls before to do so, and to make their little hobbies remunerative. Cochins, I may say, will do anywhere. I have known wonderful birds bred in very wonderful places, where no other fowls could exist. I once bought some of the best pullets I ever saw that were bred and reared in a pig-sty, some fifteen years ago. I was then living close to the town of Birmingham, and my accommodation for Cochins was limited to a small garden at the back of my house. I bred many birds there, exhibited largely, and most successfully. My pens were arranged in rows. Roost-houses, about six feet by five feet, by five feet high; yards about fourteen feet by five feet. My roost-house floors I made as follows:—Dig out about a foot of soil, fill up with ashes, well rammed down; mix up some coarse gravel, well-slacked lime, and sand, with water; lay this mixture over the ashes, and it will soon form into a hard surface, very far preferable to boards. Brick floors are very objectionable. The yards I make the same, sloping them from the pen, so that after a shower of rain the water runs off and cleanses the yards. They are easily swept out, and fresh rough sand riddled over gives them a freshness every day. I had a grass-run, about twenty yards square, and each pen of birds had the run of grass every alternate day. I was once paid a visit by a very noted Cochin breeder—one of the oldest Cochin men—and when he saw my place, and the quantity of birds I kept, he appeared to be very much astonished at my success, both in breeding and exhibiting. I noticed him stepping my ground very carefully, and, upon my inquiring his object in doing so, he said he 'was anxious to see the quantity of ground I had, and found, by his measurement, that I had only a little over *one square yard of ground for each bird*, upon calculation of measurement and the

number of birds I then had. He did not understand,' he said, 'how I could keep them healthy.' I explained to him the grand secret was *cleanliness, with careful and regular feeding.* My roost-houses were cleaned out every morning, and riddled over with fresh sand and slacked lime mixed; the yards swept out, and fresh sand riddled over every morning, and fresh water every day. For water utensils I always prefer cast iron, left in the rough state, not painted or galvanised. My birds were fed as follows:—The old birds twice a day: once with good sound malting barley, with occasionally a little Indian corn; and once a day on scalded barley-meal, with any other little alteration of food the appearance of the birds would suggest. Green food once a day; and in winter time, when green food cannot be got, a Swede turnip cut in two is a good substitute. The roost-houses were not over-crowded, and properly ventilated, for a quantity of birds shut up in a close house produce great heat; therefore, however cold the weather may be, proper ventilation is most important. Proper shelter, in the shape of some kind of outhouse, should be provided. Birds do not like to go into their roost-houses out of rain, and frequently crouch under any imperfect shelter rather than do so; and, consequently, get wet and cold, which is very injurious in any weather. Wet or fine, Cochins will make great use of good shelter, and there is nothing I know of more desirable. Young birds cannot grow if they suffer from *cold*, wet, or great *heat* of sun."

The following remarks by Mr. F. Wragg, whose success as a breeder of this beautiful variety has been conclusively proved in the show-pen for many years, will be also valuable as regards the choice of parents for breeding stock:—

"It is now eighteen years since my fancy for Buff Cochins began, and I have bred them more or less ever since; and having had a fair amount of success as a breeder and exhibitor of this most beautiful variety of Cochin, a few remarks on their selection for breeding and for exhibition may not be out of place to those who are intending to make Buff Cochins their speciality.

"In selecting the cock I should look for the following points:—Comb of medium size, set firm on the head, fine in quality, being quite free from side sprigs, perfectly straight and evenly serrated, and flowing in a neat curve over the back of the head. Beak short and thick, and well curved, being what the fancy call parrot-billed. Wattles rather long, with the ear-lobe hanging on a level with the lower edge of the wattles, both being of very fine texture; general appearance of head being very fine. Neck short and powerfully made, and finely curved. Body broad and deep; the saddle should be very broad, almost as wide as the shoulders, and from the centre of the back should gradually rise to the stern. Breast full and prominent. Thighs short and very strongly made; shanks short and thick, set wide apart; the body being set well down, and the general carriage of the bird being drooping forward gives it a most graceful appearance. When in motion and viewed from behind, where the widest view of the bird may be seen the appearance should be as round as a full moon.

"In selecting the hen, see that she resembles the cock in shape and carriage. She must have a small neat comb set low on the head, perfectly straight and evenly serrated; wattles and ear-lobe to match, being very fine and thin; general appearance of head small, with a knowing look about it; neck short and well arched; body very square and deep; breast very full, and carried well forward. The cushion, which rises from the middle of the back, should present a beautiful dome-like appearance, curving right round the stern, and almost smothering the tail. Thighs short and well-formed; shanks short and thick, set wide apart; the body set well down to the hocks; the drooping carriage when in motion gives the bird a most captivating appearance.

"In Buffs there are two shades of colour, one being of a pale delicate buff, the other a rich lemon-colour, the latter being the most fashionable. The lemon-coloured cocks, when true in colour, are

most beautiful, the hackle being a bright lemon-colour, falling gracefully from the head and round the neck, spreading out until the two edges meet below the wattles; then gradually opening out in beautiful curves, covering the shoulder-blades, and falling well on to the back. The flat of the wings and the saddle-hackle must be of the same bright colour as the neck-hackle, the saddle-hackle covering the wing-points and falling on to the side fluff, where it merges into the tail-coverts; the tail gradually rising for two or three inches in a sloping direction, and then drooping over in a half circle. The tail-coverts should be long and soft, being broad at the base and tapering to a fine point; both these and the streamers should be a deep copper-colour, the inside feathers of the tail, or what are called fan-feathers, will be more or less black in the cocks. The wings must be quite free from any approach to mealiness or chequered appearance; the colour must be quite sound and unbroken, and match the hackle and saddle; the flight-feathers must be pure buff, well clipped up, the points sinking in the soft projecting fluff, and overhung with the saddle-feathers, the shoulders of the wings being covered with the breast-feathers. The breast, thighs, and fluff must be pure lemon-colour. The thighs must be very thickly feathered, the hock-joint being completely covered with soft curling feathers; the fluff on the sides must be densely thick and long, projecting over the thighs, the longest feathers being almost as deep in colour as the neck-hackle; the fluff on the hind part must be very abundant, forming a complete circle of a lighter shade then the side fluff, and completely covering the back of the thighs; the shank must be bright yellow, the inside of shank and toes being a deep flesh-colour, the outside of shank being profusely feathered from the hock-joint, with long buff feathers spreading farther out as they reach the foot, the feathers extending to the end of the middle toe.

"The hen to match must be one uniform lemon-colour throughout, being the exact colour of the cock's breast; the hackle must be a light lemon-colour, falling in a neat curve on the shoulder; there must be no black or stained feathers in the hackle, and no signs of twist in the hackle. The cushion must be well developed, the wings folding tightly up, the joints being covered with the overhanging cushion and the side fluff, the latter very abundant, and of a soft silky texture; the flight-feathers of the wings must be lemon-buff, free from black or white, the wings and rest of body must be one shade of colour quite free from mottling; the shanks from the hock-joint to the end of middle toe must be profusely feathered.

"Having described the most fashionable winning colour, we will now endeavour to show how it may be bred. Mating lemon cocks with lemon hens will not do; the cockerels from such parents would be much too light in colour, and mealy on the wing, while the pullets would also be very light and mottled. Of course I do not mean to assert that good chickens cannot be bred from such mating, but the number will be very small. Experience has taught me to select a rich deep orange-coloured cock, the front edges of the hackle being almost red, and the rest of hackle and saddle being a beautiful golden colour; the back and flat of wings a shade or two deeper, and the streamers in the tail being a rich bronze; the breast and thighs deep buff, and the side fluff under the edge of the saddle-feathers a shade darker in colour. Such a bird should be mated with pure lemon-coloured hens, and the result will prove the correctness of these remarks.

"In breeding for size I would advise two-year old birds; at this age they are fully matured, and neither before nor after will they produce better stock. The chickens are no trouble to rear, and if properly fed grow amazingly fast, and invariably into large birds."

In Cinnamon Cochins the general body-colour is dark or cinnamon, the hackle of the hen being darker, and that of the cock, with his wings and saddle, being darker still. Silver-Cinnamons much resemble Silver-Buffs, and are often confounded, the only difference being a darker coloured hackle. At one show we remember, in which a special class for Silver-Buffs was provided, there

was but one entry, and that was a pen of Silver Cinnamon. We may add the general remark, that in the classes for "Cinnamon and Buff" Cochins, birds of *any* shade may be shown, provided the hackles be free from black, and the body and wing-feathers be sound in colour, and free from mealiness and mottling. The body-colour of the hen must in all cases be the same as that of the breast and under parts of the cock; whilst his upper parts will be several shades darker, and must be sound and even in colour. In the lighter colours the cock's tail should not be deeper than a rich bronze or chestnut in colour; in the darker Buffs black is not so objectionable, and in Cinnamons not at all so. We may, however, remark, that an *unplucked* tail perfectly free from black is very rare.

The eyes of all Cinnamon and Buff Cochins should be of a more or less defined yellow colour, to harmonise well with the colour of the plumage; but red eyes are not objectionable.

We can add little regarding the breeding of Buffs to what has been written by the eminent authorities who have already given their views at length. The essentials may be stated in brief to consist of perfect purity of colour all over the hen, while the cock must possess the same feature in his breast and lower parts, his "upper works" being of a rich, sound, and rather *deep* colour, much deeper than the colour it is intended to breed. The fault it is perhaps most difficult to avoid in hens is a tendency to be lighter on the tips of the feathers than lower down, which gives a rather mottled look, very unpleasant to the eye of a fancier, and especially common in the lighter-coloured birds. The self-colour should be pure and uniform throughout the feathers as far as possible, up to the very tips. In the cock, the general fault is a "mealy" wing, or the colour broken up with patches of lighter tint, or even of white. Such a bird is almost hopeless to breed from; all Buffs as a rule breeding lighter and lighter. Even a Lemon cock with Lemon hens will almost always breed very washy chickens with mealy wings; hence the importance attached by both the breeders we have quoted to choosing a cock whose hackle, wings, back, and saddle are a deep rich colour, *unbroken* by any lighter tint. The flights especially must be a very deep tint; and, as remarked by Mr. Tomlinson, it is far better to select even black flights than such as have any mealiness in them. Black is not however a good colour, as such birds usually breed cockerels with black *tails* also, a feature the Buff breeder endeavours as far as possible to avoid.

The birds whose portraits we have given were selected by us chiefly from their well-developed *Cochin* character. At the time, we had not for years seen a cock we thought equal to the winner of Birmingham in 1860 and 1861; and in reply to our inquiry whether any materials existed from which a portrait of him could be secured, we found that by means of a rough photograph, with the aid of a living bird of the departed hero's fine shape, though inferior by far in other points, and another which gave the exact colour, the object might be accomplished. The portrait is therefore "constructed," and corrected from memory, but is a faithful likeness. The hen was drawn from a living specimen of particularly fine development. Since these portraits were taken we have seen several chickens which have again come near the old type of bird, for several years so much lost; and the winner of the Crystal Palace Cup in 1871, in particular, shown and bred by Lady Gwydyr, was as fine a specimen of a Cochin as we can remember to have seen.

PARTRIDGE COCHINS.—These fowls have never been so universally popular in England as the brighter-looking Buffs; but their more sober colour fits them especially for many amateurs, and they have never lacked enthusiastic admirers. When small space and low fences necessitate one of the Asiatic breeds being kept, and even the Dark Brahma becomes yellow and dirty from the smoke of a town, the Partridge Cochin retains its beauty, and will do credit to the owner. In America it is a particularly esteemed variety, having been introduced more than twenty years

ago by the Rev. Mr. Marsh, of Massachusetts; so good and pure, in fact, was his strain, that birds are still to be found descended from it, which it is believed have never been crossed by any other importation.

The Partridge Cochin cock should be a rich and rather orange red about the head, and hackle the same with a black stripe down the middle of each feather, the saddle-feathers being similar. The back, shoulder-coverts, and wing-bow are rich red of a rather darker shade, the lower wing-coverts being glossy black, with blue or green reflections, forming a "bar" across the wing. The primary or flight quill-feathers should be black, with an edging of rich brown or bay on the lower edge; secondaries, bay on outer edges, and black on the inner, each feather being metallic black on the end, so as to form a black edge about an inch wide on the upper side of the wing-butts, and forming a rich background under the tips of the saddle-hackles. The breast, thighs, under-parts, tail, and leg-feathers should be rich black in an exhibition bird; white in the tail or brown in the breast or thighs being objectionable. The shanks should be dusky yellow, a shade of red between the scales being rather a recommendation than otherwise.

The Partridge hen has a hackle of rich gold colour, densely striped down the middle with black, the remainder of the plumage being light brown, pencilled over with very dark brown (see feathers on page 221), the pencilling following the outline of the feather. According to the "Standard of Excellence," the feathers on the wings and sides should show the shafts of a rich creamy-white, forming a white streak down the centre of each feather, and this colour is much the easiest to breed: but both the judges and the best fanciers have of late shown a strong objection to this, and a decided preference for a solid pencilling all over the body, somewhat resembling the Dark Brahma; indeed, it is probably the superior effect to the eye of the latter breed which has led to the change. The total absence of the white shaft is therefore now sought by our best breeders, and finds most favour with the judges, though it is much harder to breed to perfection. The most important point, however, is that the breast up to the very throat be solidly and densely pencilled over with crescent-shaped markings, a bare yellow or clayey breast being absolute disqualification if the competition be at all severe. In a high-class hen, the marking on the breast is very nearly like that on the back and sides. The purer the brown colour of the ground the better; and any approach to a yellow ground is in exact proportion a decided fault, though we have sometimes seen it justly condoned for unusual accuracy or beauty of pencilling. Legs dusky yellow. With regard to the leg-feathering the "Standard" is again most decidedly wrong, stating that the feather should be "brown," whereas in all the highest class birds it is brown *pencilled over* as on the body.*

Grouse Cochins are now merely darker Partridge (or rather, perhaps, Partridge is become lighter Grouse), though when the white shaft was bred in the Partridges there was a decided difference, the Grouse having always been bred with solid markings free from any streak. The colour of the hen's hackle in Grouse birds is richer, approaching a reddish gold. In both varieties, now merged into one of slightly different shades, as in the various Buffs, the colour of the cock is the same.

The following remarks upon Partridge Cochins are by Mr. E. Tudman, of Ashgrove, Whitchurch, Salop, so well known as a regular prize-taker with this fine variety; and are rather remarkable as showing the opinion of so long and experienced an admirer with regard to the great difficulty of breeding it to anything really like perfection.

* The above description of Partridge Cochins differs so expressly from that in Mr. Tegetmeier's "Standard" that, although given on our own responsibility, we ought to say that we have a note from Mr. Hewitt, in which he states, after perusal, the above paragraph to be his "own opinions precisely." As we shall differ seriously from the "Standard" on other points, it is well to make it thus clear at the outset that we never do so without good grounds.

"To breed any variety of fowls to feather I consider a very difficult undertaking, and, if attainable, must be the result of many years' experience and close watchfulness. As an illustration, the cockerel which was the companion at the Bristol show of the hen portrayed, although as a cockerel he was a beautifully-coloured bird, in his second year became worthless, as he moulted perfectly brown in the thighs and breast. Again, the remarkable hen illustrated has during the past season bred pullets of a directly opposite colour to herself, and on the contrary I have had birds (cocks) which would never throw one not true to colour; and the question has therefore often arisen in my mind, should there not be two classes of Dark Cochins, brown-breasted and black-breasted, as in Game? Mr. Punchard's Dark Cochins which he used to exhibit were, I believe, brown-breasted;* so that the black breast of the present day is of recent introduction, and is difficult to attain, the want of it frequently annihilating the chances of what may be otherwise a most valuable bird.

"At present there is much danger in breeding from cocks other than with breasts black well up to the throttle, black thighs, and bright red hackle well and darkly striped, and in fact I have never done so. Some breeders I believe breed from dark pullets to get the desired colour in cockerels, but I am of opinion that this is much of a lottery.

"It is essential that fresh blood should be introduced from other yards in this as in other breeds; but I consider this should be done with the greatest care and judgment, and the breed and pedigree of birds carefully ascertained. A stricter attention to this would, I think, not produce the frequent disappointments to which Partridge Cochin breeders are peculiarly subject.

"Although our judges have of late I think sacrificed to some extent colour for size, colour has always been my ideal of beauty in Partridge Cochins. The white shaft of the feathers in pullets is now to a great extent condemned; and birds covered all over with solid regular pencillings are desired, with the same brown colour over the whole of the body. Birds with yellow or clay breasts are objectionable, although we see birds of large size even with clay breasts sometimes awarded prizes.

"The hen cannot be too large in frame, with full cushion, neat head and comb, her hackle darkly striped, and the body wholly and distinctly pencilled with a dark brown or grouse-colour. Any approach to yellow or clay in the breast or throat is most objectionable."

The Partridge Cochin is in fact most difficult to breed to the recognised show standards in any large proportion of the chickens. In this all breeders are agreed; and we think it may be traced to the fact that *the first* Partridge Cochin cocks were undoubtedly more or less brown-breasted, a colour which has not for a long time been allowed in the show-pen. It has been stated, especially by one writer of much pretension, that the black breast so desired was produced by a cross from the Black Cochin; but for this assertion there is no ground. It might not be safe to deny that the cross was ever employed; but we do know that one at least of the best strains in England has never been so crossed, and the assertion is therefore unnecessary merely to account for the change, which is indeed far less than simple selection in the hands of skilled men is capable of accomplishing in any breed. The old brown-breasted cocks and streaky-marked hens were bred true to feather with comparative ease; but the change to black breasts in the cocks was made *before* that to solid marking in the hens, and hence the origin of the difficulty. The means of overcoming it appear to be understood as yet by only a very few breeders, and various amateurs of note proceed upon a somewhat

* To a great extent we believe this remark to be incorrect, though it has been repeated in many quarters as if unquestionable. Mr. Hewitt writes us that "Mr. Punchard's *best* cocks, as judged so frequently in years far gone, were entirely black-breasted;" and no one can speak to this point with such authority.

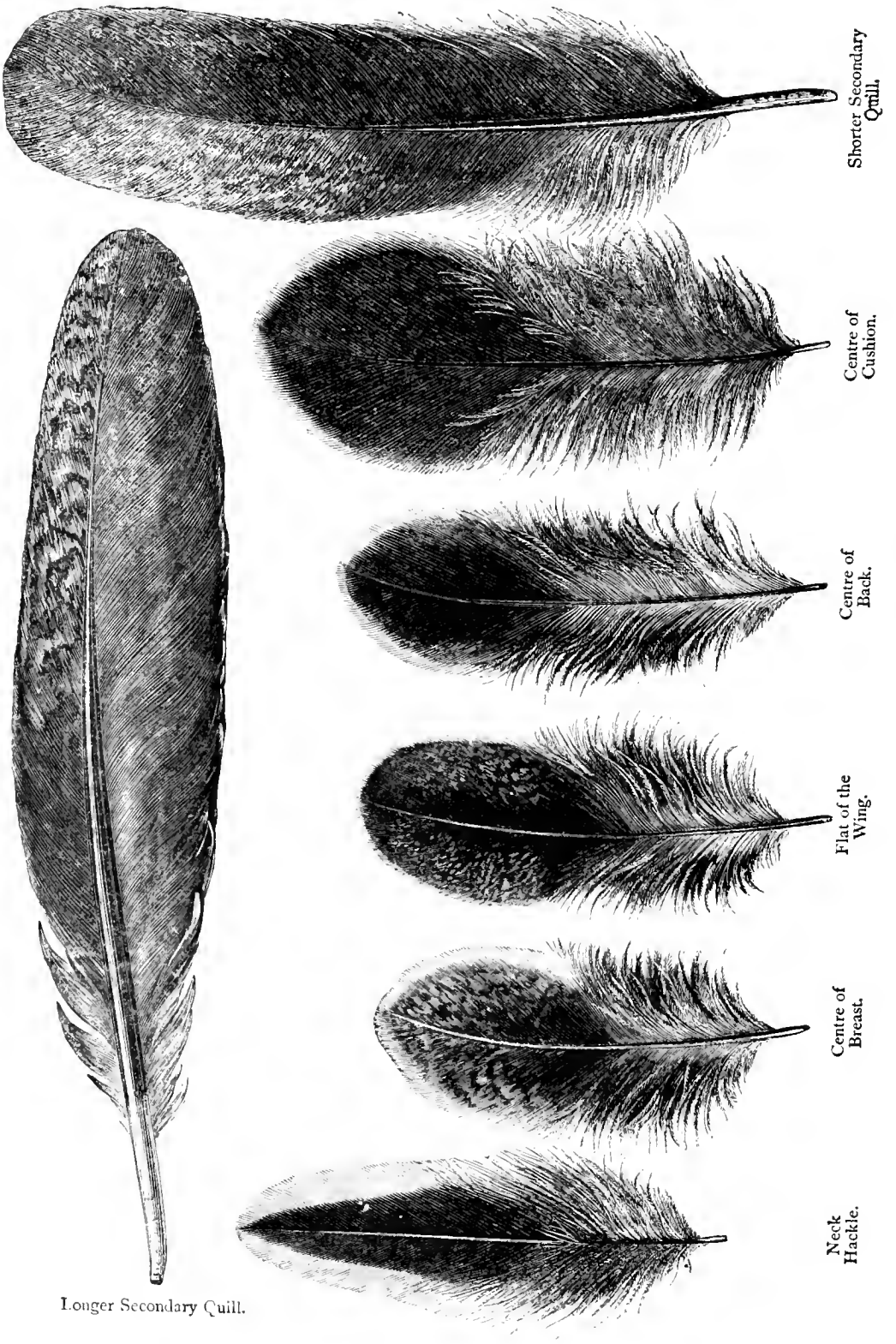


Fig. 60.—PLATE SHOWING FEATHERS FROM PARTRIDGE COCHIN HEN FOR BREEDING COCKERELS.

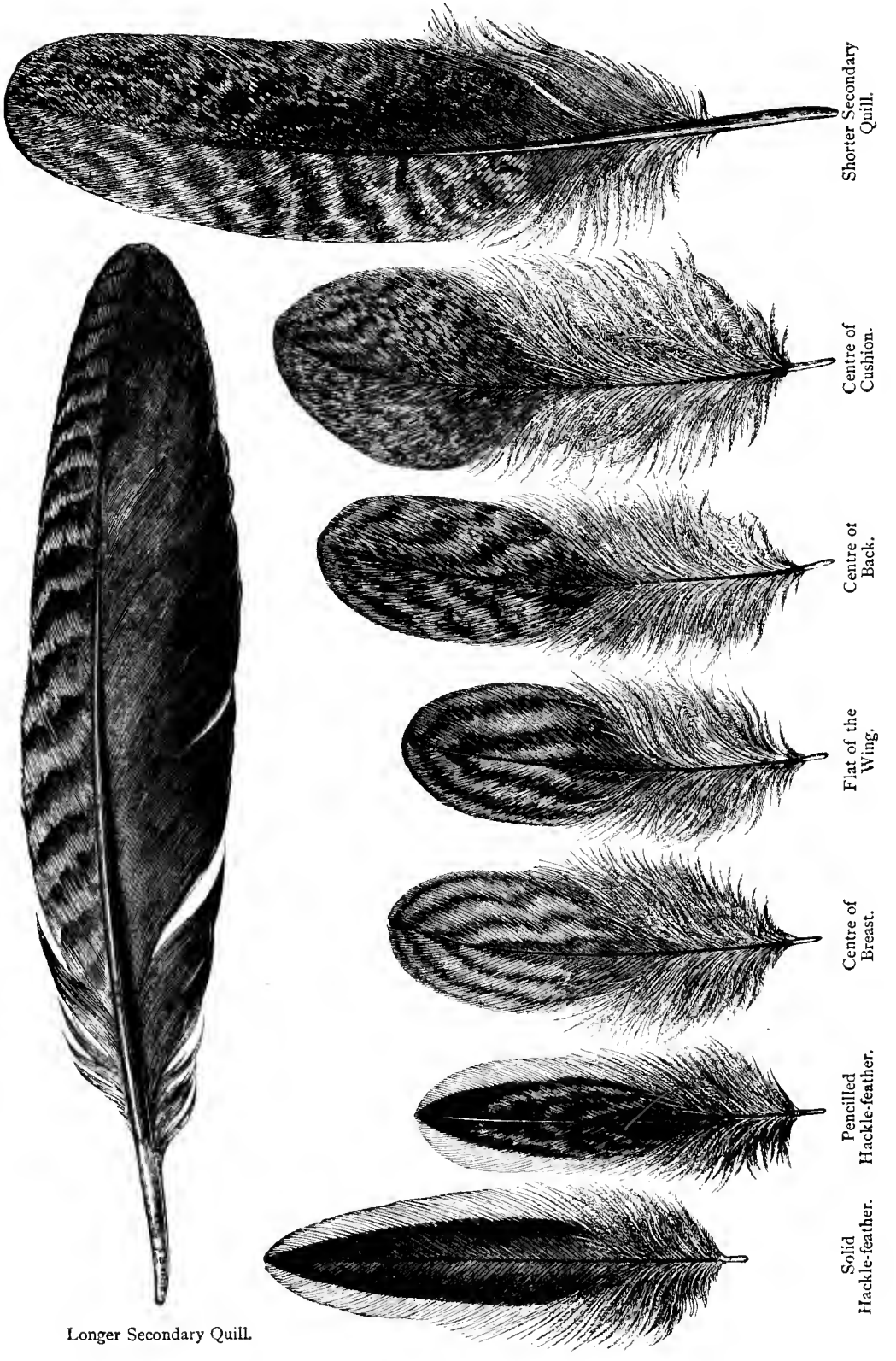


Fig. 61.—Plate showing Feathers from Partridge Cochin Hen for Breeding Pullets.

different system; but the following rules embody the best and most successful experience we have been able to gather, besides conforming—so far as can be—to our own experience in the analogous case of the similarly pencilled Brahma. On the whole we are perhaps most indebted for the rules here given to information gathered from the strain of Mr. Crossley, of Halifax, and especially from Mr. J. Wadsworth, a gentleman under whose advice most of these birds have for years been mated, though he does not himself exhibit at shows. We have also obtained corroboration from other skilled breeders who do not wish their names to appear.

In breeding cockerels, then (it is very necessary in this breed to match up separate pens for breeding the different sexes), a cock should be selected which, in addition to presenting the ordinary Cochin characters, has a really black breast, fluff, and leg-feather, with hackles of a rich *red* striped with dense black. The hackle behind the neck may approach to orange red, but towards the throat in front should be very dark. Saddle-hackles ought to be nearly the same colour, but need not be quite so dark. The shaft of the feather showing as a thin cream-coloured line in the hackle will not much matter, but the *web* of the hackle should be *jet*-black quite up to the stem or shaft. The hens to mate with such a cock should be of a *very* deep and rich brown ground-colour, almost the colour of roasted coffee, and with rich reddish-orange hackles, the markings on her feathers resembling those in the plate (Fig. 60), which represent very accurately the markings of a hen which has bred some of the best cockerels ever exhibited. The distinguishing characteristic of these feathers is that the pencilling, though very small and minute, is close, almost black in colour, and nearly covers the ground, making a very dark and rather dull-looking hen. In such hens the shaft of the feather usually shows slightly, as in the plate; but this is of very little consequence in breeding cocks, though it will be so much the better if all streak be absent. The longer secondary quills, as shown in the plate, will be nearly black, and the cushion-feathers are often scarcely distinguishable from black; but even in that case a lacing of the ground-colour (perhaps rather paler or nearly gold-colour in this part), should extend quite round the feather, as shown; for if it does not there will be a want of brightness in the cockerels produced. From such mating, at least after a year or two's breeding, a very large proportion of cockerels will be fit to show, though for a little while after commencing not much certainty can be expected. We should advise *great* care in commencing any strain of Partridge Cochins to avoid white in the cock's tail, which in this breed is *particularly* difficult to breed out when once it has obtained a footing.

For breeding pullets, on the contrary, quite a different type of bird will be necessary. The plate (Fig. 61) shows very accurately the markings to be sought in the hen; the breast-feathers particularly being very solidly and accurately pencilled with several perfect semicircles or crescentic markings, so thickly as to nearly approach the general effect over the rest of the body. The other feathers will show much the same character, and the whole marking should be rather large and broad, and very intense in colour, the shaft of the feather showing if possible not at all. The hen's hackle may vary: if she be a show bird, there should be a solid stripe down each feather; but as far as breeding is concerned, some of the very best marked pullets are produced from birds whose hackles are somewhat *pencilled*, as in the second hackle-feather of Fig. 61. The ground or margin-colour of the hackle in either case should be a rich bright gold-colour, and the dark marking should reach well over the top of the head. The ground-colour over the rest of the body will be rather a light brown, approaching buff, but totally free from any bright *yellow*, which is objectionable. The cock to mate with these hens should have a reddish orange, rather than red, hackle, densely striped with black; and a few brown spots on his fluff or even breast will be little injury to him as a pullet-breeder. Many people would suppose that by mating such birds

as we have described pullets much too light would be produced; but such is not the case if the strains can be at all depended upon. In all cases the pencilling on the hens must be *very* dark, almost if not quite black, and the breast especially *well* covered with solid pencilling—this last being most important of all.

Starting with such dissimilar pens for breeding the different sexes, it will be very desirable to amalgamate them into one, which shall breed both sexes in a satisfactory manner. This can certainly be done; but it will take a few years to effect it. It will best be commenced by selecting well-marked pullets, very heavy and solid—indeed black, in the pencilling, but with a comparatively clear brown ground-colour, and mating them with those cocks from the cock-breeding strain which show a medium margin-colour but have the densest stripes in the hackles. Much will depend upon getting rid of any white in the shaft of the cock's hackles, and upon choosing for stock-birds only those which are *sharply* marked in the lesser tail-coverts, with good *dark-headed* as well as dark-breasted hens; but by carefully selecting these points a strain may at length be formed which will breed a large proportion of good pullets with a very fair number of exhibition cockerels, most of which last will have hackles of a very deep orange-red colour, approaching in front to a rich red.

For the following remarks we are indebted to Mr. Hewitt, who wrote them in reply to a query. They will not only confirm what we have said as to the marking now approved by the best judges, but give valuable instruction of their own to those who attempt the breeding of this difficult variety of Cochins. It may be as well to add, for the sake of those who have lately entered the poultry-fancy, and therefore only know Mr. Hewitt as its most valued judge, that he was for many years a skilled Cochin breeder.

"I certainly do *not* myself like the light-coloured shaft in the feather you speak of, as such marked hens very rarely produce cocks clearly *listed* (striped) on the hackle and saddle-feathers, or of a good solid *black* on either the throat or fluff-feathers. These hens are generally tawny or 'foxy-headed;' that is, the crown of the head, and sometimes the uppermost throat-feathers, are mostly without pencilling, and of a ground-colour (whether it be marked a little, or not even at all) very similar to a fox or hare behind the ears. Hence such birds are well known in the fancy as 'foxy-headed hens.' Whether or not they be streaked on their body-feathers, I am decidedly opposed to these birds; for from a goodly number I bred many years back, and from constant attention to the result in the case of other breeders of many years' experience, I know *beyond any doubt* that these *tawny-headed* hens always breed cocks ruddy-feathered on the thighs and throat, than which nothing can be more objectionable. Again, the cocks are usually quite light and plain-coloured in the hackles and saddle-feathers, whilst even the shoulders have no intensity of colour; and of course such 'foxy' hens breed 'chips of the old block' as regards their *own* sex. Really good hens are alike to the wattles, and nearly so even *over* the head to the very nostrils; that is, pencilled all over with dark colour as on the body, leg-feathers included. Such birds are very attractive in colour, and much admired even by persons who do not as a rule care for show fowls."

Really first-class Partridge Cochins are very beautiful in the show-pen. The saddle-hackles of a first-rate cock, especially, show a hard and "waxy" lustre which only the Game fowl can surpass; and were more *good* birds bred and shown, we doubt if any variety would surpass this in popularity. For many years leg-feather has been more wanting in this breed of Cochins than in any other; but during the last two seasons there has been an evident improvement in this respect, and we have lately had an opportunity of seeing some pullets which can hardly be surpassed in all the features of good Cochins.

The cock portrayed was in most respects a very good specimen of his class, which is perhaps rarely equal to the Buffs in general style and make; though, as already remarked, there are

symptoms of improvement of late, and we have private knowledge of marked advance in several yards. The hen was a truly extraordinary bird, one of the very best Cochins ever beheld; and those who saw the style in which she and her consorts won at the Bristol show of 1867, not only the cup in their own class, but that for the best pen of Cochins in the show, beating both a good class of Buffs and one of the best White classes ever seen, will not wonder at our choice of a representative. The portrait hardly, perhaps, does her justice in colour; being made from her stuffed remains.

WHITE COCHINS.—The number of persons who can keep any breed of white fowls must always be limited, or no breed of Cochins would have more enthusiastic admirers than this. We have often wondered that it is not more kept, simply *as an ornament*, by the proprietors of country mansions, for nothing can be more indescribably beautiful than half a dozen White Cochins dotted over the rich green of a lawn; while they usually do little or no harm in the way of scratching, even to the flower beds, and easily become so tame that children may take them up in their arms. It is rather singular that whilst the White Cochin cock is rarely quite equal to his "Buff brother" in the peculiar Cochin carriage and style, particularly as regards the saddle and tail, which last is generally too long, the *hen* not unfrequently surpasses all other varieties in the grand points of width, cushion, fluff, and feather. In all these respects the bird represented in our plate was a perfect model; and was in fact so well known for her high qualities, that at an auction, since our portrait was taken, she realised the sum of fourteen guineas, one of the highest prices given for any single hen of late years.

The plumage of this variety may be simply and shortly described as a pure and perfect white all over, and breeding them is therefore comparatively a simple matter, though, owing to the purity of colour requisite to success, we cannot say it is more *easy* than in the case of other varieties. This purity of colour, in fact, is the most difficult point; besides which, White Cochins, if at all heavily feathered, are *peculiarly* liable to vulture-hocks. Owing to this tendency many almost bare legs are shown; but so very bad and out of taste appears a bare-legged White Cochin, of all breeds, that we would infinitely rather see even heavy hocks in this case than such an unsightly type of bird. By mating heavily-hocked cocks with nearly bare-legged hens, however, in a large number of cases perfect hocks may be secured; but we should advise the hocks being cut off with shears, in order to avoid any effect on the imagination of the hen. Regarding other points, they will be found sufficiently treated of in the following notes, furnished at our request by Mr. Elijah Smith, who has few competitors as a breeder and exhibitor of this variety, and under whose care the birds we have portrayed achieved most of their well-earned triumphs:—

"In choosing your breeding stock, be very careful to select those that are the purest white. There are several shades of white in Cochins, so that it is very essential to select the richest white, and especially such birds as have retained their white plumage after they have moulted; for there are a great many go yellow on the back and wings after moulting, and you will sometimes see this even in cockerels. You should avoid breeding from such birds if you have others to choose from—as to be successful in exhibiting White Cochins the rich and clear white plumage is the great point to be aimed at—or you will be disappointed, as the young stock will generally take after the parent in this respect. The hens are not so subject to this change of colour as the cock, but still you will see a difference even in them upon close examination; and always select the best and cleanest coloured ones, and you may depend upon it that it will repay you for the trouble in your young stock.

"Your male bird should have plenty of quality, viz., good straight comb, not too large, but smooth, well serrated, and very firm on the head; good large deaf ears, *quite red*, and large wattles;

strong yellow beak and legs, and a good sharp red eye. Those with a greyish eye are very subject to go blind, and this colour is an indication of a weak constitution, therefore should be avoided as breeding stock. Get plenty of feathers on the legs and feet; and avoid all flesh-coloured or white legs, or you will find that such are very apt to produce green and even black legs, which fault is a certain disqualification. Take also birds that are large, with good carriage and style.

"Hens should be large in frame, with a good neat head, strong yellow beak, good red eye, and brilliant wattles and deaf-ears; broad body with plenty of fluff, and small tail, almost covered with the soft feathers that are round the tail, with a good cushion on the rump.

"I prefer to breed from birds that have moulted once; but if obliged to breed from cockerels, should put hens with them two years old; and if the other way, pullets with old cocks: and in selecting these should choose those with large frame and plenty of bone, so that we may expect to have good large chickens. This is another great point, when you have quality as well; for to breed small birds, in Cochins, Brahmas, or Dorkings, is useless for exhibition; therefore avoid breeding from small birds, and be very careful not to have those that are related in any way, if possible to avoid it. And as there is so much buying at exhibitions, it is as well to take the trouble to inquire in buying whose strain they are, for although you may think they cannot possibly be anything related to your own, they may have been bred from eggs purchased from the same source that your own stock or a portion of them have come from, or may have been claimed and resold several times; so that it is sometimes very difficult to ascertain whether you are breeding from relations or not: and, if related, the progeny will, according to my experience, be sure to decrease in size, and in many cases, where you find birds small, if you could trace it out, you would find that relationship is the cause of it.* You will find that late hatching and overstocking your runs have just the same effect, and I would therefore strongly advise any one never to breed later than May, and never to overstock the ground; as by breeding only a few, and attending well to them, you will in the end be far more successful, and will also get a better profit, with much less labour, besides keeping your stock free from disease.

"Your next object, after you have reared your stock, is to keep them white; and in order to accomplish this you must keep them as much from the powerful rays of the sun as possible, by providing shelter—either trees or covered runs. A good thickly-covered wood is very good; but if you cannot avail yourself of this, you should run your cock birds under some kind of shelter, where the sun cannot get to them during the time that the rays are most powerful, after which you may let them out, and you will find that this will save your birds very much. The hens do not change colour so much as the cocks, so that you need not take the trouble with them. It is also necessary to take special care not to give the birds any substance for their dust-bath that is likely to soil their plumage to such an extent that washing will not restore it to its original whiteness, as there are some kinds of sand that are very red and will stain the plumage very much; in fact so much that it scarcely ever gets to that beautiful clear white again that it originally was, even when you have washed the bird over and over again. I select therefore as white a sand, or small gravel

* Regarding the evils of relationship, which are so insisted upon by the writer of these remarks, we have already expressed in the general portion of this work views which do not go to the same extent in condemning such breeding as those of Mr. Smith. But there is a reason for the condemnation here urged in the comparative *fewness* of White Cochin breeders, which causes all the stock in the country to be related more or less, and therefore aggravates the evils of any relationship so near as to amount to actual consanguinity. In the case of Malays this general relationship is still more true, and the evils of breeding from actually related birds are correspondingly still more directly felt by the breeder. Wherever the strains of a breed are limited, the arguments pressed by Mr. Smith will more or less apply; while in other cases their urgency is not so great, and may be modified by the other considerations to which we have before adverted.

and sand, mixed with lime, as I can get, and by so doing find no difficulty in keeping them very clean and healthy. The sand should be pretty sharp, and if it has been washed it would be all the better; while a little of the lime with it helps to keep the whole very dry and sound.

"The above are the chief points my experience has taught me to attend to in breeding White Cochins, and in order to keep them in good health and condition."

We may add to the above remarks, that there is a strain of White Cochins which shows a reddish tinge through the plumage independent of any coloured sand. Such birds should be either rejected or bred from with very great caution. It is also very questionable whether lime should be used in the dust-bath, as here advised. It undoubtedly promotes health to do so, but it injures the plumage, and Mr. Hewitt is very strongly against it. "My own experience as to lime given to white Cochins to bask in, or white fowls of any kind," he says, "is that it decidedly tends to produce the yellow tinge so highly objectionable in white birds; and I have, therefore, always scrupulously avoided it. The grand pair of four-year-old Whites with which, many years back, I took precedence in a very severe competition at Birmingham, *had never been washed at all*, the only appliance used being perfectly clean drift-sand from the lanes as a dust-bath, yet their colour and condition were unexceptionable."

BLACK COCHINS.—In the days of the Cochin "mania," splendid specimens were shown of this variety, but since then it has become nearly extinct. One reason for this was the fact that the cocks in their second year almost always acquired a number of reddish or golden feathers, particularly in the hackle and wings, as is now the case with the black Crèvecœur. This disgusted breeders, who did not understand then so fully as now that patience and skill would have overcome the difficulty, and given us a variety of very great beauty. All the specimens we have seen of late have been very "weedy," stilty, and comparatively bare-legged; but we know one or two fanciers who mean to make an attempt at reviving this splendid breed as soon as they can secure passable stock, and hope to see the object accomplished before long. There is, in fact, a good prospect for any amateur in this direction, as quite mediocre specimens very often take prizes in the "any variety" class at English shows, and we are perfectly sure that any even fairly good birds would literally "carry all before them." No experimental rules for attaining this object can be given, for reasons already stated; but the plan of proceeding would be to breed as largely as possible from the *best* specimens obtainable—if possible rearing one or two hundred chickens. From such a number a few birds could probably be selected presenting the Cochin characters very fairly; and then the work would go on by carefully selecting stock that showed good width, saddle or cushion, leg-feather, and the greatest possible freedom from red or golden feathers. Black and white being to a great extent interchangeable colours, a cross from a fine *white* Cochin hen might be tried with advantage to give substance and quality; and we believe that by putting only one white hen in a run, and dyeing her black, the white might be bred out again without difficulty.

CUCKOO COCHINS.—This variety is occasionally shown, but has little to recommend it. The colour may be easily gathered from our plate of the American Dominiques: the shape and other points should be as near as possible to good Cochins. We believe this variety to have been produced by crossing with the Scotch Grey breed, which is of the same "Cuckoo" or Dominique marking, as we have never yet seen birds that showed the true Cochin characters *in perfection*. This fault might be easily remedied in a few years by judicious selection of stock, and the colour can be bred without any difficulty, this marking having a very strong, or, as Mr. Darwin calls it, a "prepotent" tendency to transmit itself to progeny; but, as we have already remarked, the result is

of no particular beauty, and perhaps scarcely worth the trouble, though a tolerably good pen will generally secure one of the prizes in the class for "any other variety."

SILKY COCHINS.—Cochins are now and then met with in which the webs of the feathers having no adhesion, the whole plumage assumes a silky or flossy character, like that of the silky fowl. It usually occurs quite accidentally, and in every case we have met with the variety has been Buff. By careful breeding the character can be transmitted, but we have only known *one* case in which there had been this hereditary character, the others having been of accidental occurrence. Such birds are sometimes called "Emu" fowls.

Except as mere curiosities, Silky Cochins are not worth perpetuating. They are generally, when handled, really very small in the body, rarely exceeding six pounds, though their loose plumage makes them appear little inferior to others in size. This loss of weight we believe to be owing to the want of protection from cold and wet which they have to contend with, and in consequence of which they are generally rather delicate. When wet no fowls can look more truly miserable; but if thoroughly clean and dry, there is something unmistakably attractive about them, which is quite enough to account for their having a few admirers. We are not at present aware of any established strain of this variety. In colour and all other points they ought, if shown, to present the proper characteristics of ordinary Cochins.

We add a few general remarks on the breeding and exhibition of Cochins generally, to supplement the notes of the eminent breeders who have already written on their special varieties. And first, the observation of Mr. Tomlinson as to the necessity of commencing with *first-class* stock is to be understood within certain limits, and chiefly with especial regard to the points of head and colour, both of which are strongly hereditary. In commencing a strain, purity and soundness of colour in Buffs or Whites, and the requisite marking in Partridge birds, must be secured regardless of cost if success is hoped for; and so must the neat and *straight* comb, which is so indispensable to triumph in the show-pen. Any fault in these points will be surely perpetuated; but in points of shape and size more latitude may be allowed; and in particular, a small, compact, short-bodied cockerel, with very broad and high saddle, and heavily hocked, but which is perfectly correct in colour, may not unfrequently be secured at a moderate price; and if put with long-backed, scantily-feathered hens, much too narrow for the true Cochin type, will often "fill up" the outlines of the progeny, and produce really first-class stock, from which with a little care a valuable strain may be formed and established. The vulture-hocks will give little trouble if judgment be exercised; they will infallibly reappear to a certain extent in the third generation, but selection will banish them without any loss of feather, except in occasional instances which need give no concern to the breeder. As Mr. Hewitt truly observes, however, "vulture-hocked fowls of any breed are invariably coarse in the skin—a great objection to poulterers;" hence hocked birds should not be employed oftener than absolutely necessary to restore lost feather.

We may remark that not only the fancy value in many respects, but even the economic or utilitarian value of Cochins, can in a great degree be determined by the quality of the plumage, and especially of the "fluff." We do not mean colour, so much as *texture*. If this be coarse and wiry, the meat will almost invariably be found inferior and stringy, whereas a fine downy plumage is generally accompanied by delicacy of flesh and good laying qualities.

Another very important point in choosing stock has never, we believe, been heretofore observed, and we are indebted for it, as for so many other practical notes to this chapter, to Mr. Hewitt. "I should like," he says, "to direct your attention to a fact at which, so far as I am aware, no one as

yet has even hinted. It is, that when the ear-lobe of a Cochin has been *brilliantly florid, very thin, and fine in texture*, I never met with such a bird, in even all my experience, that did not possess *many other* remarkably well-developed Cochin characters. It is quite true such an ear-lobe (and I mean one pendant to the bottom of the wattles, and even occasionally below them) may co-exist with a 'drop-comb,' or perchance twisted tail, or again have the mealy wing—these failings may arise; but for *general* development of real good '*quality*,' just note for yourself such birds as do really possess these fine ear-lobes for the future, and you will be surprised how unbroken is the result as to fine 'quality' generally. In fact, it is a simple rule that appears to be an invariable one."

Picking out "wasters" from Cochin chickens is somewhat difficult; Buff birds disfigured by black spots or splashes may, however, be safely condemned; and so may bad combs, which last never become straight, though straight combs, as remarked in the next paragraph, often become crooked. Narrow birds often "fill out" and subsequently make fine show fowls, especially if the cushion appear pretty large in proportion. Partridge cocks when young often show a great deal of brown about the fluff and sides of the breast, which afterwards moults out to an unexceptionable black; great caution should therefore be exercised before rejecting them for this fault. Pullets which appear rather hocked when young often acquire almost perfect hocks when full grown, and birds only slightly hocked should therefore be kept to see how they turn out; while cockerels, on the contrary, at an adult age, frequently show more hock than ever. Mealiness also in Buffs, especially in the cock's wing, rarely or never improves with age, and may therefore be condemned as soon as possible.

Pullets intended for show should be sedulously kept from company with the male bird, as the soft downy plumage is very easily injured. The best time to show, as with most other fowls, is just before laying, when anything more indescribably "pretty" than a well-bred Cochin's head can scarcely be imagined, unless the preference be given to the head of a Brahma. There is another reason for not showing pullets earlier, the want of knowing which has occasioned the spoiling for show of many beautiful birds. Many persons have remarked on the frequency with which perfectly straight and fine combs become crooked or twisted as the birds become adult; but we have perfectly satisfied ourselves, from personal observation, that the change frequently takes place *during a single show*, when birds are sent whose combs, owing to their youth, have not attained their full development. The heat of the gas and excitement of the crowd appears in such cases to "draw up" the combs with marvellous rapidity—they want tone and strength to bear their own weight—and the mischief is done; whereas, in many cases, had they been kept at home till the combs were fully developed, the ordeal would be borne without injury.* In *some* cases we have reason to believe that a comb relaxed and overgrown in this or any other way may be restored by daily bathing with some strong astringent, such as a solution of sulphate of zinc, but this must be carefully kept from entering the eyes.

To keep Cochins in health when confined they must—more than any other variety—be *plentifully* supplied with green food; if not, their digestive system soon suffers, and the plumage becomes ragged and scurfy. Particular care must also be exercised to prevent over-feeding, as this breed has a special tendency to accumulate internal fat, causing sterility, disease, and even death. Indian corn is therefore not good food for them as a rule, though we have known individual birds which throve upon it better than upon anything else. In severe cases of this prejudicial fattening the hinder part of the body almost touches the ground, penguin-fashion, and if this be not speedily

* Mr. Hewitt writes that he can fully and literally corroborate our statement on this point, having often seen the injury here referred to.

checked rupture is a frequent result. The most beneficial course in such an event is to allow the bird to *sit* for as long as five or six weeks, feeding her very sparingly once every two days till the system is reduced, by which means a cure may often be effected, unless apoplexy or rupture should cut the matter short, terminating at once the life of the fowl and the perplexities of the proprietor.

Cochins have great merits, the chief of which are their hardiness, their winter-laying qualities, their large size, and the *extremely* small space in which they may be kept. In illustration of the last point we may refer to Mr. Tomlinson's account of his own yard. If they are sparingly fed on everything except green food, *this* being given liberally, they are scarcely ever ill; but these two conditions are essential. Perhaps the greatest drawback to these good qualities is the unearthly howl rather than crow of the cocks, which makes it in towns often impossible to keep them, where but for this they would be the very best fowls for the circumstances. Their rather coarse quality of meat and deficiency of breast are also faults, but for which they would have value as market fowls. As it is they are disliked by poulterers, though for home use very profitable, as the legs, which are very large, are in our opinion, and that of many others (and the same remark may be made of the Brahma), *far* superior to those of other breeds, and though not equal to breast-meat, really delicate and good family eating. We speak of course of young birds; the leg of an *old* Cochin is certainly rather an unmanageable morsel.

Next to the peculiar crow, probably, the greatest objection to keeping Cochins is the frequent propensity to sit. To some extent this may be prevented, but it rarely answers to check the desire altogether. The bird should be taken from the nest *at once* on appearing broody, and put under a common wicker coop, on *hard* ground, with water always by her, but little food. If possible, the coop should be placed in some open and bustling locality, or in a strange run; and if two have to be confined in one coop all the better, as their quarrelling will mightily assist the process of forgetfulness. The great secret is to remove the bird at the very commencement of the instinct, and to prevent by all means her quietly "settling down," even on the ground. A mild dose of jalap will often greatly assist, but no words are too strong to condemn the various kinds of "water treatment" which are sometimes advocated. Many cases of mysterious disease are thus originated, and in not a few instances direct death has resulted from such cruel proceedings. Tying a red rag round the tail is a more innocent and often effectual way of "breaking up" a broody hen; but where the *extent* of the inconvenience is the only objection, by far the best plan is to mitigate it by imposing on the maternal instincts, Cochins being very easily deceived. A few days before hatching one or two of the eggs should be transferred to another hen just beginning to sit, and when all are out, and have been cooped a few days, the *whole* of the chickens may be transferred to her, and the other hen, which really hatched them, returned to the yard. Having had the care of living chickens for a day or two, she will not again resort to the nest; and in this way, by employing one hen virtually to *hatch* the eggs, and a second hen to rear the chickens, each brood will give rest and occupation to two hens instead of one, and as each bird will lay again proportionately sooner, the annual production of eggs will be considerably increased. Such a plan would not answer with many breeds, but Cochins and Brahmas are very easily imposed upon in this way.

Cochins make first-rate sitters, and are good mothers up to the time when they desert their broods; but as this occurs at an early period they are not suited for delicate breeds, unless careful artificial protection be devised to take their place. Pullets will often lay again within a fortnight of hatching their chicks; and sometimes, after laying a dozen or score of eggs, endeavour to sit again. On an average, Cochins cannot be depended upon, therefore, to go with their chickens longer than from four to six weeks. They are so predisposed, however, to the duties of maternity, and so good-tempered and lazy, that very often by simply putting the discarded chickens under

a broody hen at night, she will take to them next day; and many instances are also recorded of even Cochin cocks making exemplary foster-parents for orphan chickens, not only at night, but taking all the care of them in the day-time that a mother would have done. As a rule, in fact, Cochins seem of a really genuine *affectionate* disposition, which gives great pleasure in watching their ways and habits, and accounts in great part for the fondness with which they are nearly always regarded by their owners.

Their large frame and hardy constitution make Cochins to some extent valuable as a cross; but such experiments need judgment. To turn a Cochin cock into the ordinary stock of a farm-yard is to ensure certain deterioration, the progeny being invariably a race of coarse, weedy, long-legged brutes, which no poulterer will look at, and no one will eat if they can help it. There are however three good crosses, in all of which the Cochin hen and foreign cock should be employed to obtain the desired result. The first is with a compact Dorking, which produces very large and pretty hardy birds, which mature early, and make splendid table fowls for family use; but being rather coarse in frame and generally showing traces of feather on the legs, are not so well adapted for good town markets, though this prejudice may be and has been overcome. The next is with the Crêvecœur, which produces really splendid table fowls, tolerably fine in bone, but of quick growth and of great weight. These, too, are tolerably hardy, but so far as we can judge from various reports, not quite so much so as the Dorking cross. The third is with the Houdan cock. The produce of this last is the best layer of all the crosses named, but is generally of a very "common" appearance so far as plumage goes. The carcase is not so large as either of the other crosses, but is of good quality and quickly matured; it is perhaps somewhat inferior in breast-meat to the two others. The chickens of this cross cannot be surpassed in hardihood by any fowls whatever.

We might add that the American breeds known as Dominiques and Leghorns have very evidently been produced originally by crossing Cochins with either Scotch Greys or Cuckoo Dorkings for the Dominiques, and Spanish for the Leghorns; but in these cases the new race has been fixed by subsequent careful breeding. Plymouth Rocks, Danvers Whites, and nearly if not all the other American breeds, also owe much to a Cochin cross.

JUDGING COCHINS.—Before entering into any details, we may make the general remark that in deciding upon the merits of good Cochin classes, it is above all things necessary that the judge should have in his mind's eye an intuitive perception, so habitual as to be almost instinctive, of the more specific "Cochin" characters. For want of this we have seen many mistakes made, especially in small shows. The purest colour cannot atone for a marked deficiency in that square and, as Mr. Tomlinson aptly calls it, "lumpy" development, with the fine, gentle-looking, truly aristocratic head, which always distinguish the truly high-caste Cochin. A broad and rising saddle in the cock and ample cushion in the hen are especially to be looked for, and when in any degree of perfection will very rarely be found dissociated from fine fluff, leg-feather, and other characteristic points; so that the task of the judge as regards estimating the "symmetry" or proportion of the birds is more simple than it would be did not this rule generally hold good. The rule as to the quality of the ear-lobe laid down by Mr. Hewitt in page 229 may also be of great assistance. The minor points will give much more trouble, and will demand to be considered more in detail by any but a *very* experienced judge, if he would have his decisions to be satisfactory to himself and the public.

We have already made some general remarks upon the real place and value of a "Standard of Excellence," with its scale of points. Every judge must have some notion in his mind of the

comparative value of different features; and a scale is, after all, the simplest and easiest way of expressing this. At the same time it will be evident that in proportion to the soundness of any scale ought to be the frequency with which the average decisions of the best judges agree with it; and, tried by this standard, we have found the scales for most breeds grossly inaccurate; failing repeatedly in cases where the decisions were evidently perfectly correct. In the descriptions of very many classes both Mr. Tegetmeier's "Standard of Excellence" and the American (which is chiefly founded upon it) are also needlessly complicated. It is quite useless, for instance, to describe every colour of Cinnamon and Buff Cochins in detail, when *any* shade may be properly shown, provided it conform to certain easily understood rules. We can for this and other reasons follow neither published work; it is only due to our readers to give adequate grounds for forming a comparison between our own tables for judging and those which have preceded us, and this we can most properly do in the case of the first breed which demands consideration. We shall, therefore, in the case of Cochins give such grounds, comparing at least the elements of the existing scales, and making such remarks as a careful testing of them at many shows may demand; afterwards explaining how our own tables have been arrived at; and finally, giving what the same experience has taught us to be *correct* descriptions and practical and accurate scales of points. In future we shall only quote the American scales when they present distinct peculiarities of their own, or refer to breeds not mentioned in the other; and shall not refer further to Mr. Tegetmeier's work at all, even to correct its errors, unless these latter are of such importance as seriously to endanger the success of the inexperienced breeder.

Mr. Tegetmeier's numerical "Standard" for Cochins has at least the merit of simple brevity. As in all other breeds, he adopts for his total number of points the figure fifteen, of which he allots one each to head and comb, carriage of wings, legs, and fluff; two points each to general symmetry and condition; three points to size; and four to colour. The scales for the three leading varieties are given separately, but are practically identical, the only variation being that in Partridges the four points for colour are separated—two points being given for black breasts in cocks, or pencilled breasts in hens, and the other two points for colour of the remaining plumage.

The American scales, on the contrary, vary somewhat in the different breeds, as follows:—

Buff and Cinnamon Cochins.

Size	20
Head	5
Comb	10
Wings	10
Legs	5
Fluff	5
Colour	20
Symmetry	15
Condition	10
	100

Partridge and Grouse Cochins.

Size	20
Head	5
Comb	5
Carriage of Wings	10
Legs	5
Fluff	5
Black breast, thighs, &c., in cock; breast distinctly pencilled up the front in hen	15
Colour of remaining plumage	10
Symmetry	15
Condition	10
	100 *

White and Black Cochins.

Size	20
Head	5
Comb	5
Carriage of Wings	10
Legs	5
Fluff	5
Colour—purity of white or richness of black	25
Symmetry	15
Condition	10
	100

* This is the American scale of points, as published in the correct editions of their "Standard." We note the fact because Mr. Tegetmeier has copied (from an incorrect and unauthorised edition called in as soon as issued, and expressly overruled by a subsequent convention of fanciers) an absurd scale which adds up to 110 points, apparently in ignorance of the fact that *two* correct editions of the American work have since been issued by different publishers.

In comparing these two scales, the first general question that arises is regarding the best standard total for the value of points. Any one who tests the total of fifteen points before the actual pens, will soon find it inadequate; but this does not decide the point we are considering, which really is whether as small a number as possible, in which the least important points are represented by unity, shall be chosen, or the higher number of the American fanciers. A small number has the advantage of simplicity, and hence apparent quickness of application; but it fails in *elasticity*, and therefore in accuracy. It is, in fact, absolutely *incapable of being applied at all.* Taking for example the series of points—head and comb, carriage of wings, legs, and fluff—which are each represented by unity in Mr. Tegetmeier's scale, it is conceivable that such representation might give with approximate accuracy their comparative value as related to each other and to the more important points, in forming a general *idea* of the merits of a bird. But if it is pretended to estimate the rank of the bird by really adding up the points, and giving the award to the one which carries the highest number, such a scale must fail; for it can but very rarely happen that head and comb will be either so perfect as fully to deserve the ideal estimate, or so bad as fairly to lose *all* their value in competition. *Partial* excellence or failure is the rule; and in such cases a scale based on unity could only be applied by the expedient of deducting what we may call a *portion of a point* from such as require it, as by allotting either two or three points in the total to the four we have been now considering. Such a process is necessarily too rough to be worth much in its results; and it is a simple fact that, in spite of the recent amusing assertion by its editor that the points of excellence in the English scale "have been so generally agreed upon by *the* exhibitors and judges" (whatever the definite article may mean), and in spite also of the good we have gladly admitted to have been done by it in some respects, there is not at present a single acknowledged judge in England who professes that his awards are even *intended* to be generally in accord with the "Standard of Excellence," or a skilled fancier who pretends to breed to it. No doubt this is partly owing to actual error in the scales; but much of it is due to the fault, inherent in any small-scale system, which we have been considering, and which we regard as fatal.

On the other hand, a scale which allows to the least important points a numerical value of say four or five is at least free from this defect. If a perfect comb is to count five, the judge may deduct for partial faults either one or more, or the whole points for it, according to his estimate of the amount of defect. And although we have freely admitted, in our chapter on "Shows and Judging," that no good judge will ever, unless in very rare cases, attempt actually to add up the points in making his awards; still, as he insensibly acts according to real though not actually reasoned-out canons which govern his decisions, if these are to be tabulated at all, it should be done in such a way as adequately to represent what is intended. We think therefore, that in this respect American fanciers have decided wisely; and that for these practical reasons, as well as such as are connected with decimal and other properties, the number 100 combines the greatest advantages of any which could be chosen.

Having made these general remarks, which to some extent cover the whole ground, we will now briefly consider both scales in detail. As regards Mr. Tegetmeier's: in many respects it is really creditable, and perhaps at the time could hardly have been surpassed. In all the remarks we have made or may make as to the deficiencies of this set of scales, we do not wish to have it. forgotten how much more difficult it was to frame them with the very inferior competition and limited experience then available, than from such ample materials as our best shows now afford That they should show evident traces of having been constructed "round a table" rather than before the pens was almost inevitable under the circumstances; and so it is in the specimen before us. A very short testing by any good judgment at a large show will show that it is faulty—1, in not

giving enough weight to general symmetry or Cochin proportion; and, 2, and more especially, in taking no note whatever of the most important Cochin "points" of saddle or cushion. It is true, as we have before remarked, that good development here is generally conjoined with good fluff; but if it be intended that the one point for "fluff" should carry weight for both features, not nearly weight enough is given, or nearly what really is given, consciously or not, to this important point by all good judges. To give exactly equal weight to the four points of head and comb, wings, legs, and fluff, is also perfectly ridiculous, according to any modern judging. Less evident deficiences we need not point out, as our opinion in regard to them will be sufficiently shown by our own table.

The American scales can best be compared with the foregoing by dividing them by five, when the minor points will be reduced to unity, and can be brought into direct relation to the others. They have the same want of consideration for saddle or cushion, but are superior in the additional weight they give to symmetry, and also to the points of head and comb. To the latter, in fact, they give *too much*, and they also embody absurdities of their own from which the English scales are free, and which show even more than the latter the most careless haste in compilation. It will be seen that they give five points less to colour in Buffs than they do in Partridge, Black, and White; and, on the other hand, head and comb receive five points more in Buffs than in Partridge and other colours. As regards colour, if there be any difference, the very reverse would be the truth, according to all sound English judging; which, lax as it justly is regarding the mere shade of Buff birds shown, is more severe than with any other colour, except perhaps White, regarding good matching and purity of tint. The American scale is also faulty in giving all the points a value of exactly 5 or some of its multiples. No *correct* scale could be thus mathematically allotted, and the same test to which we have so often referred—simple trial before a few pens well judged—will instantly prove the mistake of such a "hard and fast" line.

So far all has been comparatively easy. We have now and in the remaining chapters of this work to approach the much more difficult task of framing a set of schedules, which if possible *shall* represent correct judging, even according to the more advanced and higher standard of merit of the present day. Those we shall give have been arrived at by degrees, and have at last assumed a shape so directly opposite to all which have preceded them, that it may be well to give briefly the reasons why that shape was finally adopted.

In publishing a few years ago a little work solely on "The Brahma Fowl," and in giving a scale of points for judging that breed, we stated that we had conclusively proved the previously published "Standard" to be not only erroneous, but in its very essence not *elastic* enough; and we added the remark, "We feel convinced that to form any [reliable] system at all, it is needful to value marked *defects* as well as points of merit; and it is from the want of this that 'The Standard' has not been found comprehensive enough when tested by actual results." We arrived at this conclusion chiefly from the utter impossibility we had found of reconciling some evidently correct decisions of Messrs. Hewitt and Teebay, in a large Brahma class at Birmingham, in any other way, with *any* scale it was possible to frame; and we accordingly, as will be seen from the next chapter, gave a table of positive defects to be valued *against* a bird, as well as points of merit to be reckoned in its favour. All subsequent experience proved the truth of this principle so far as it went; and by this means we succeeded in reconciling nine-tenths of the decisions we had been able to collate in most breeds with the scales we had framed, though there still remained a few marked exceptions. These latter we were disposed to think could not be reduced to any system whatever, and we accordingly had our table of points for judging Cochins actually put in type as on the following page:—

Points of Merit.	
Head and Comb	8
Neck Hackle	3
Saddle or Cushion	6
Carriage of Wings	4
Fluff	6
Legs and Leg-feathers	5
Form and Carriage of Tail	3
General Shape and Carriage	15
Colour and Markings	22
Size	18
Condition	10
	100

Points to Count against the Bird.	
Vulture-hock	15
White in Tail (where objectionable)	10
Primaries out of order	12
White in Deaf-ears	10

In this shape the table was submitted some time since to Mr. Hewitt; and in his reply, giving reasons why in his opinion no scale could be formulated which would meet all cases, he made one remark especially which finally caused us, while preserving general proportions, to radically reconstruct the whole. "Circumstances," he observed, "are constantly arising which bear very strongly *against fixed points;* to wit, I have seen some of the very best birds so *worn out* in condition [from over-showing] that no one could conscientiously give them any notice, yet *the best* in all other points. Of these one died during the show; the remaining two following suit, one in a week, the other about three weeks and a half afterwards." Now this remark is perfectly just, for it is obvious that to lose the ten points for want of condition would by no means meet the case here supposed, and which had been omitted by us, as by others, on the ground that it was too *obvious* to need tabulation. On its being thus mentioned, however, by such an authority, we felt that such a ground of omission was untenable; but when we proceeded to add to the table of defects an item for such utter loss of condition as had been spoken of, it became evident that the whole system of tabulating excellencies was fundamentally wrong, and that a plan which had occurred to us some years since, of valuing *defects solely*, offered the only sound basis for a table of points. Judging *really is*, in fact, a question more of defects than of excellencies, since without some general approach to excellence no bird can have any place in a good class. Such a plan also meets another difficulty, which in forming our own scales we had encountered again and again, and which consists in the fact that the number of points given to one feature, while as much as could be allotted consistently with the *proportionate value of other individual points*, were often not enough compared with the *total value of a perfect bird*. This has been discovered by others besides ourselves, and is hinted at in the very last issue of the New York *Poultry Bulletin*, come to hand just as this is going to press; the editor justly remarking that "there may be one slight defect amounting almost to a disqualification, and still the bird will *foot up* more points than any other bird in the exhibition-room—yet any good breeder would condemn him on sight." The difficulty arises from the necessity of not only making the values of various points proportionate with each other, but of keeping the total *within the ideal number*. On the other hand, by starting from the standard or highest value, and simply deducting what may be necessary, we are free from this necessity; we are no longer obliged to keep the sum of our points within our ideal or perfect number, but can give them what weight we find necessary as *compared with that number*, as well as compared with each other; and hence, if only calculations are correct, ought to be able to meet nearly if not quite every case that can occur.

So much for theory. In practice, we found that when thus remodelled, nearly all the exceptions remaining in our note-book, and which we had regarded as irreconcileable with any fixed "standards" at all, now disappeared, falling within the rules. In fact, not one such exception remained in any of the breeds we best understood personally; and hence it appeared probable that with further study even the few left in those we felt less acquainted with might be resolved. We have not, therefore, shrunk from recasting the whole of our scales, and finally present them in the shape they now assume. Using no false mask of "authority," we present them avowedly as our own, on their own merits, with the remark that they *do not in some points represent what we think ought to be the standard*, or seek to lead the judges to views of our own, but are simply an attempt to follow them, and tabulate and translate *their* views, as consolidated, not by argument or "conventions," but by competition and experience on the show-ground. In some points we would wish values to be otherwise; but have found the figures which would represent these wishes so constantly overruled that we have been forced to modify them. We do not for a moment pretend that errors may not be discovered and pointed out, but we have a very strong confidence that if the scales now presented be tested patiently on the show-ground or in the fancier's yard, they will be found to pronounce with singular accuracy the merits of birds as estimated by the best English authorities. It is thus they should be judged. So different are "ideas" or "parlour-work" to the teaching of actual competition, that a really correct scale will, until tested, often appear actually absurd. But let the reader select from our schedules that for any breed which he thoroughly understands: let him take that schedule and that only, and, before a *number of pens*, test it by the awards of proved and skilful judges; and we believe he will find that both their successes, and—if they have made any—equally their mistakes, will give to our figures an emphatic endorsement which no others will be able to claim. Should it be so, he will perhaps be warranted in the conclusion that the schedules for breeds he does *not* understand may be equally accurate; and if they thus obtain the confidence of intelligent breeders, the immense anxiety and trouble they have thus twice cost us will be well repaid.

The plan we have thus adopted may by some be thought less simple than the other. We can only reply, first, that simplicity which stands in the way of *accuracy* is not a benefit; and, secondly, that this difference will be found to be more in appearance than in reality. We do not wish any judge to "work by book," but rather have attempted to tabulate in such a form as can be studied at leisure the *reasons* of correct decisions, and to supply means for forecasting them, or to check erroneous ones. Hence accuracy is all-important; while at the same time it will be found that the very detail of our tables makes them really easier of application than simpler, because *looser* figures, can ever be. With these remarks, which will save returning to the general subject, we submit the whole, not for the opinion, but the candid trial of the experienced breeder. As regards our descriptions, we shall make them as concise as we can consistently with accuracy, and adopt one uniform plan throughout the work.

The following, then, is a carefully revised

SCHEDULE FOR JUDGING COCHINS.

GENERAL CHARACTERISTICS OF COCK.—*Head and Neck*—General appearance of head small and good-tempered; beak curved, rather short, and very stout at the base, resembling in shape a parrot's bill; comb single, upright, neatly arched, perfectly straight, free from excrescences, fine in texture, and symmetrically notched or serrated; wattles long, thin, and pendent; deaf-ears sufficiently developed to hang nearly or quite as low as the wattles; neck rather short and carried somewhat forward, thickly furnished with hackle, and handsomely curved, the hackle flowing gracefully over the shoulders. *Body*—General appearance large and deep; the back broad but very short; saddle very broad and large, with a gradual and decided rise towards the tail, forming a harmonious line with that member; wings small and closely clipped up, the flights being neatly and entirely tucked under the

secondaries; breast broad and full, rather high as compared with Brahmas, but coming as low down as possible. *Legs and Feet*—Thighs large, and thickly covered with "fluffy" feathers, standing out in a globular form; hocks nicely and entirely covered by soft curling feathers, but free from any stiff quills (vulture-hocks) which are particularly objectionable; the shanks short and thick, set on wide apart, and heavily feathered down the outside, the feathering to start out well from the very hock, and continue to ends of outer and middle toes; toes large, straight, and well spread out. *Tail*—Small and soft, with as little hard quill as possible, and carried low or nearly flat. *Size*—Very large, ranging from ten pounds to thirteen pounds in cocks, and eight pounds to eleven pounds in cockerels. *General Shape*—Massive and deep. *Carriage*—Rather forward, high at the stern, and dignified.

GENERAL CHARACTERISTICS OF HEN.—*Head and Neck*—General appearance of head very small, intelligent, and kindly; the beak as in the cock; comb and wattles also similar but as small as possible, the comb being uniformly serrated; deaf-ears well developed, but smaller than in the cock; neck as short as possible, carried well forward, and thickly furnished with hackle. *Body*—General appearance large, and more square than the cock's, the shoulders being rather more prominent; back very flat, wide, and short; cushion exceedingly broad, full, and convex, rising from as far forward as possible and almost burying the tail; wings as in the cock, but smaller in proportion, the points being nearly buried in the abundant body-feathering; breast full, the keel coming as low down as possible. *Legs and Feet*—As in the cock. *Tail*—Very small, carried almost horizontally, and nearly buried in the cushion. *Size*—Very large, ranging from nine pounds to eleven pounds in hens, and seven pounds to nine pounds in pullets. *General Shape*—"Lumpy," massive, and square. *Carriage*—Tending forward, high at the cushion, and with a very matronly appearance.

COLOUR OF LEMON-BUFF, SILVER-BUFF, OR CINNAMON COCHINS.—*In both Sexes*—Beak a rich yellow. Comb, face, deaf-ears, and wattles brilliant red, with as few small spiky feathers as possible. Eyes should match the plumage as nearly as possible, but red eyes are not objectionable.* Legs a bright yellow, with a shade of red between the scales. *Colour of Cock*—Breast and under parts any shade of lemon-buff, silver-buff, or cinnamon, provided it be even, and free from mottling. Head, hackle, back, shoulders, wings, and saddle any shade of deeper and richer colour which harmonises well—lemon, gold, orange, or cinnamon—the wings to be perfectly sound in colour, and free from mealiness. Tail still darker in tint, but as free from black as possible, except in the darker Buffs and Cinnamons, in which black is not objectionable; white in the tail very objectionable in any colour except Whites. *Colour of Hen*—Body all over of any even shade, free from mottled appearance. Hackle of a deeper colour to harmonise, free from black pencilling or cloudiness, cloudy hackles being especially objectionable. Tail as free from black feathers as possible. Birds must match in the same pen, and in matching different sexes the hen's body-colour must match that on the cock's breast and lower parts.

COLOUR OF PARTRIDGE AND GROUSE COCHINS.—*In both Sexes*—Beak yellow or horn-colour. Comb, wattles, &c., as in Buffs. Eyes bright red. Legs yellow, of a dusky shade. *Colour of Cock*—Hackle rich bright red or orange-red, with a dense black stripe in each feather. Back, shoulder-coverts, and wing-bow rich red, of a more decided and darker shade than the hackle; wing-coverts metallic green-black, forming a wide and sharply-cut bar across the wing. Secondaries rich bay on outside web, which is all that appears when wing is closed; black on the inner web; end of every feather black. Primaries very dark bay on outside, dark on inside web. Saddle rich red or orange-red, either same colour as, or one shade lighter than the hackle. Breast, under parts, thighs, and leg-feathers glossy black, as intense in colour as possible. Tail black, richly glossed; white in the tail not a disqualification, but very objectionable. *Colour of Hen*—Hackle bright gold, rich gold, or orange-gold, with a broad black stripe in each feather, the marking extending well over the crown of the head. Rest of the plumage a brown ground-colour distinctly pencilled over in a crescentic form with rich dark brown or black, the pencilling being perfect and solid up to the throat. The leg-feather to be pencilled as the body.

COLOUR OF WHITE COCHINS.—*In both Sexes*—Beak rich bright yellow. Comb, face, &c., as in Buffs. Eyes pearl or bright red. Legs brilliant yellow. Colour of plumage all over a pure and perfect white, free from any straw or reddish shade; the cock will often show a straw tinge on upper parts, but this is to be avoided as far as possible.

COLOUR OF BLACK COCHINS.—*In both Sexes*—Beak yellow, horn-colour, or yellow and black. Comb, face, &c., as in Buffs. (The comb in Black Cochins has a great tendency to be rough, but this is to be avoided.) Eyes bright red, dark red, or nearly black. Legs dusky yellow. Plumage all over in both sexes a rich black, well glossed, and free from golden or reddish feathers.

COLOUR OF CUCKOO COCHINS.—*In both Sexes*—Beak a rich bright yellow; but horn-colour permissible. Comb, wattles, &c., as in Buffs. Eyes bright red. Legs a brilliant yellow. Plumage all over a ground-colour of bluish grey, barred or pencilled across with bands of dark blue grey; the cock's hackle to be as free from a golden or reddish tinge as possible, and his tail free from either black or white feathers.

* White or pearl eyes are much admired by many, but are very apt to become blind. We should ourselves prefer red to any colour, as it denotes greater vigour of constitution, and to our eye looks as well; but red eyes in Buffs are very rare.

VALUE OF DEFECTS IN JUDGING.

Standard of Perfection.	
A bird ideally perfect in shape, size, colour, head and comb, cushion or saddle, leg-feathers, tail, &c., and in perfect health and condition, to count in points	100
If of extraordinary size, add on that account [a]	5

[a] To add to an "ideal" number may seem absurd. In the case of most points it would be so; but as regards size, there is a fair average standard which entitles a bird to be called *perfect* on that account, while yet any excess ought to count in its favour.

Defects to be Deducted.	
Bad head and comb	10
Want of hackle	5
,, ,, cushion	8
,, ,, fluff	7
,, ,, leg-feather	7
Vulture-hocks *	20
Bad shape or carriage of tail	6
White in tail (where objectionable)	6
Primaries out of order [b]	15
Curved toes	7
Stain of white in deaf-ear	6
Faulty colour or marking	24
Want of size	20
,, ,, general symmetry	15
,, ,, condition	12
,, ,, ,, (if total)	35

[b] This refers to primaries merely "slipped" outside the wing. For primaries actually twisted on their axes, see list of disqualifications below.

DISQUALIFICATIONS.—Birds not at least tolerably matched. Primary wing-feathers twisted on their axes. Utter absence of leg-feather in either one or more birds. Badly twisted or falling combs. Legs of any colour but yellow or dusky yellow. Black spots in Buffs. Brown mottling (if conspicuous) in Partridge cocks, or pale breasts destitute of pencilling in Partridge hens. White or black feathers in Cuckoos. Crooked backs, wry tails, or any other actual deformity. Any fraudulent dyeing, dressing, or trimming.

It is only necessary to make one remark—which would equally apply to all others—respecting the use of such a scale as is here given. The values are intended to represent—not *total* failure, which would in many cases disqualify (for instance, a bird with a comb as bad as *could* be would have no right whatever to a prize)—but such defect as may exist without debarring the bird from competition. Then the *degree* of defect must be estimated by the individual who applies the scale, who will deduct as near the total number of points for each defect as he thinks warranted. Hence there must still be room for individual judgment and difference of opinion; and even with the scales in hand, it will take experience and knowledge to make a good judge.

It will in practice be found that a bird which retains, after all deductions, a value of eighty-six points, has a good chance of first prize, while ninety points will make winning almost certain, except in very severe competition. Eighty points will often secure second or third prize in very good classes.

* Some judges consider this a disqualification. We have in particular the very highest respect for Mr. Hewitt's opinion on this matter; but we still think that if a bird is good enough, otherwise, to win against twenty points *it deserves to do so*. Several good judges think with us, and even Mr. Hewitt has been known to unite in giving prizes to decidedly hocked birds.

CHAPTER XIX.

BRAHMAS.

THE controversy which was carried on so long and so keenly regarding the original source of the Brahma fowl is chiefly interesting in so far as it bears upon the more general subject of the origin of varieties or species; which latter has, owing to the more recently developed views of Mr. Darwin and his disciples, become one of the important questions amongst scientific men of the present day. To support the doctrine of the development or evolution of distinct varieties or species from pre-existing species, it is of much importance to collect any evidence which may be obtainable tending to authenticate actual examples of this process; and though the creation of a mere variety would not have the importance in a controversy of more specific differences, yet could it be established that even so peculiarly distinct a variety as the Brahma had actually been evolved by the art of man—not gradually or in course of time, but *suddenly* by a lucky cross—from pre-existing races of fowls, and had been bred for more than twenty years since without further change or deterioration, the fact would unquestionably be entitled to very great weight. It was perhaps natural, therefore, that Mr. Darwin should have somewhat too eagerly seized upon it, and with a carelessness which is most strongly to be condemned in a scientific man, but which our own knowledge of the facts of poultry-breeding enables us to assert is paralleled by some other instances in the same work,* stated, without any authority whatever but the bare *ipse dixit* of Mr. Tegetmeier, that "Dark Brahmas, which are believed by some fanciers to constitute a distinct breed, were *undoubtedly* formed in the United States within a recent period by a cross between Chittagongs and Cochins." It was this rash endorsement by a really eminent man of an otherwise insignificant assertion, that chiefly induced us a few years ago to go at some length into this subject; and which, though we cannot repeat all the arguments at length, leads us to insert here a short recapitulation of the facts.

In a letter to Dr. Bennett, Mr. Virgil Cornish, of Connecticut, gave the following account of these birds:—

"In regard to the history of these fowls very little is known. A mechanic by the name of Chamberlain, in this city, first brought them here. Mr. Chamberlain was acquainted with a sailor, who informed him that there were three pairs of large imported fowls in New York; and he dwelt so much upon the enormous size of these fowls that Mr. Chamberlain furnished him with money, and directed him to go to New York and purchase a pair of them for him, which he did. The sailor reported that he found one pair of light grey ones, which he purchased; the second pair were dark-coloured, and the third pair were red. The man in New York, whose name I have not got, gave no account of their origin, except that they had been brought there by some sailors in the India ships. The parties through whose hands the fowls came, so far as I have been able to trace them, are all obscure men. I obtained my stock from the original pair brought here by Mr. Chamberlain, and have never crossed them in the least. These fowls were named Chittagong by

* "Variation of Animals and Plants under Domestication."

Mr. Chamberlain, on account of their resemblance, *in some degree*, to the fowls then in the country called by that name; but it is certain that they never bred until they reached this town."

At Fitzburg, Connecticut, Dr. Bennett exhibited early in October, 1850, chickens of this breed, which he stated he had "purchased at a very high figure from Mr. Cornish." Mr. Hatch also exhibited them at Boston; and next year Dr. Bennett, Mr. Parkinson, and Mr. Hatch, all showed them; Mr. Hatch winning, and his chickens being purchased by Dr. Bennett. All these gentlemen *belonged to Connecticut*, which of itself, independent of their own direct testimony (freely enough given), proves clearly enough that this State was the head-quarters or source of the breed, and that from the first it bred very true to characteristics; all the pens named as thus shown being direct descendants of one stock, whatever that was. This is important, as it is in the early generations that a recent cross suffers most from what we may call disintegration.

This account and these facts are at once clear, consistent, and satisfactory, and would have established the origin of Brahmas as conclusively as Mr. Sturgeon's account at the time did that of his strain of Buff Cochins, in the absence of any conflicting testimony. Such, however, appeared in "A History of the Hen Fever," published at Boston, in 1855, by Mr. G. P. Burnham, and which gave a totally different account of the matter. In this—as Mr. Tegetmeier himself calls it—"unscrupulous work," Burnham affirms that Dark and Light Brahmas had *distinct origins*, but that he—modest man!—had made them *both!*—the Light, by breeding from some pure uncrossed Grey Cochins; the Dark, by crossing Cochins with Grey Chittagongs. Of this, Burnham says, "no one entertains a doubt;" and Mr. Tegetmeier takes him at his word, his account being supposed to acquire a certain value from the fact that late in 1852 he sent over a consignment of so-called Light Brahmas to Her Majesty the Queen, and in the following year a number of dark birds to various breeders. The cool effrontery with which he relates how the present, which was graciously acknowledged by Her Majesty with the gift of her own portrait, was designed simply and solely as an advertising puff, is somewhat remarkable in poultry literature. Both sets of birds were engraved in the *Illustrated London News* of the period, and to an ignorant eye justify Mr. Tegetmeier's assertion that the two had "unquestionably very distinct origins;" but to every skilled breeder of the Brahma it is at once apparent that one set of fowls (the Dark) *are Brahmas*, while the others are not; and the inference would be that some time after the first exportations of birds, which, however fine, were not Brahmas, Burnham had got hold of the genuine strain. The question of dates hence becomes of much importance; so far, at least, as such testimony can be considered worthy of discussion.

It appears then, from Burnham's own book, that it was in 1851 and 1852 he had such "a run of luck" with his grey birds; while we have already seen that so early as 1850 the pure strain of Mr. Cornish was publicly exhibited. At the New England Society's show in that year, in fact, as we have ascertained through the kind assistance of Mr. F. Crook, on unimpeachable testimony, Burnham *endeavoured to purchase* some of the Brahmas there exhibited, but failed; and on that occasion *admitted* to Mr. Morse, the secretary, and to Mr. Cornish, who was also there, that he had "never seen the pure Brahma-Pootras before." That he afterwards bred tolerable imitations is not denied, nor that he may in 1851 and 1852 have had a "good run of luck" with them; but these birds *were not Brahmas:* and at the New England Society's show in 1852, Dr. De Gruy stated that he had bought some of Burnham's strain, and they "were no more like the true Brahmas than an owl is like a hawk." There is plenty of English evidence to the same fact. In *The Cottage Gardener* (now amalgamated with *The Poultry Chronicle*, and which is still the recognised English poultry organ) of 1853, Mr. P. Jones states the fact of a pair of "Brahmas" he bought breeding

silver cinnamon offspring—a sure sign of recent crossing—while the pure unmixed stock, obtained direct from Dr. Bennett, who had his from Mr. Cornish, "invariably bred pure grey." In December of the same year the editor of the journal himself writes, that "while what have been considered the purest strain of the Brahma-Pootras have thrown *pure chickens only*, we know on good authority that the produce of *imported birds of equally high pretensions* (Burnham's) have produced buff chickens with black hackles."

Further testimony still being desirable, a valued American correspondent, Colonel Mason C. Weld, associate-editor of one of the most widely-circulated agricultural papers in the States, forwarded to Mr. Cornish a series of questions on the subject, and transmitted to us Mr. Cornish's reply, as follows :—

"New Britain, Connecticut, U.S.,
"*November 9th*, 1869.

"Mason C. Weld, Esq.

"Dear Sir,—I have your letter of 5th. I give below all the facts relating to the early history of the Brahma-Pootra fowls I can call to mind at this late day. At an earlier day I could have given a history of these fowls more satisfactory to myself, *i.e.*, more fully than I can now; nevertheless, so far as it goes the truth of it cannot be questioned. I will at once answer your questions.

"1st.—Mr. Chamberlain's Christian name is Nelson H.

"2nd.—The sailor's name I never made note of, and cannot give it.

"3rd.—The ship arrived in New York in September, 1846. The first brood came out in May, 1847. I purchased the most of that brood in August, and the old pair the April following.

"4th.—The name of the port from which the ship sailed with the fowls on board is Luckipoor. This port is up from the mouth of the Brahma-Pootra river, in India. The name of the ship I cannot give, neither can I give the name of the captain. Did not at the time think it of importance, and made no record of it.

"5th.—The Brahmas were first exhibited in Boston by Mr. Hatch, of Hampton, Conn., under the name of Grey Chittagongs, in 1850. I declined exhibiting mine at that time; I believed them to be a breed different from the Chittagong, and preferred to accumulate stock and test them further before bringing them out publicly.

"6th.—I attended the exhibition at Boston, and contended that they differed from the Chittagongs, and should pass under a different name. A committee was appointed, and the name Brahma-Pootra given; it being the name of the great river from the banks of which they came. The name was then established.

"7th.—Weight of cocks, full-sized, twelve to fourteen pounds; cocks, six to seven months, nine to ten pounds Hens when first introduced, nine to ten pounds.

"8th.—I did notice the 'pea-comb' on the first birds. It was small. It was not so with all, and yet it appeared different from the comb of the Chittagong.

"9th.—There was no degeneracy in the birds of my breeding. I had some specimens larger than the imported birds. I sold no birds until December, 1850. I sold at first at twelve dollars per pair, and soon after from fifteen dollars to fifty dollars per pair. The price went up as the fowls became better known, and recognised as a distinct breed.

"10th.—I bred them eight years, when my health failed, and I was obliged to leave all care for a time.

"11th.—*There was a tendency to throw dark chickens*, but a greater tendency to become lighter, and yet not white like the White Dorking. All breeds of fowls having dark and light feathers can be varied either way, to darker or lighter, by choosing always the darkest or the lightest for breeders. If your stock of Brahmas are pure, and they are allowed to breed together promiscuously, the variation in colour will be slight. I never bred to either extreme.

"Yours truly,
"VIRGIL CORNISH."

The conflict of assertion, it will be seen, is absolute and direct between Mr. Cornish and Burnham, but this last letter is absolutely conclusive unless it can be discredited; for Burnham's own account does not claim anything on his part till several years after the date here named as that of the introduction into Connecticut of these fowls. It was therefore attempted to discredit it; and in a review by the *Field* of the work in which Mr. Cornish's note was first published, the following remarks were made :—

'A sailor, whose name nobody knows, belonging to a ship whose name no one remembers, and having a captain whose name is also unknown, is stated to have sailed from the port of Luckipoor with the original of these fowls. It is a pity Mr. Cornish did not also forget the name of the port; for geographical truth compels us to state that Luckipoor is not a port at all, but a small inland town, situated in the Himalaya mountains, 100 miles from the nearest point of the Brahma-Pootra river."

On reading this singular criticism, we felt somewhat puzzled to decide whether the writer intended it as a daring speculation upon our own and his readers' ignorance of Indian geography, or really meant it in good faith, owing to his own. But adopting the latter supposition, and availing ourselves of such authorities as were at hand, the following reply was sent, and courteously inserted by the editor of the *Field*, with the curious comment appended:—

"I must ask you for a few lines in reference to what you state concerning Mr. Cornish's geographical accuracy, in stating that the birds came from Luckipoor, 'up from the mouth of the Brahma-Pootra river in India.' You state that it is a pity Mr. Cornish 'did not forget' the port as well as the name of the ship and captain, inasmuch as Luckipoor is 'not a port at all, but a small inland town in the Himalaya mountains, 100 miles from the nearest point of the Brahma-Pootra river.' This statement is so important that I am sure you will allow me to correct it.

"First, I think I may say that Mr. Cornish, had he been 'making up' a story, would have taken the very simple precaution of seeing to it that his geography was not so grossly inaccurate as you imply

"But, secondly, to come to facts. In the excellent Gazetteer published by Messrs. Blackie, Luckipoor is described as being 'sixty miles S. by E. of Dacca, near the left bank, and within a few miles of the mouth of the Great Megna, with which it communicates by a small river. The Megna has a breadth near Luckipoor of more than ten miles.' As the name Megna might mislead some few readers, I add the description of this, also from Blackie: 'Megna, the name given to the river Brahma-Pootra throughout the latter part of its course, and by which it is known at its embouchure in the Bay of Bengal.'

"So much for Blackie. I need not add, what is so well known to you, that even the 'small rivers' of India are easily navigable. But, further, in the 'Penny Cyclopædia,' art. 'Hindostan,' p. 217, is the following passage, speaking of the rise of the tide in the river Brahma-Pootra: 'At the bifurcation of the Chudna branch it rises between thirty-one and thirty-two feet; at Dacca only fourteen feet; and further southward, at Luckipoor, not more than six feet.'

"These are the only works of reference I have just at hand. I can easily find other testimony, but think you will allow these to be quite sufficient. I enclose for your inspection, however, a rough sketch, drawn for me from memory alone by an old officer who spent twenty years in India, and who inclosed it in a letter which had no reference to your review, or to any mistake in geography whatever. You will see his sketch exactly agrees with both the above.

"I trust you will consider the authorities here quoted as evidence sufficient that the place whose name Mr. Cornish so unfortunately did *not* forget is, at all events, geographically possible to have had the honour he assigns it of first exporting the Brahma fowl.

"L. WRIGHT.

["We have communicated with our reviewer, and he replies as follows.—ED.:—'Luckipoor, as appears from Indian geographies, is a name applied to more towns than one. There is a Luckipoor in the Hills, in 27 degrees N., the one referred to by me; another in the Sunderbunds, 22 degees N. latitude by 89 degrees E. longitude; and a third in 22 degrees 53 minutes N. latitude by 90 degrees 53 minutes E. longitude, which appears to be the one referred to by Mr. Wright. In "Fullarton's Gazetteer," which is a more copious one than that Mr. Wright quotes, this town is said to be "a few miles inland from the east bank of the Megna," and the fact of its being situated on a small river communication therewith will not alone suffice to make the town a port, otherwise many places on the tributaries of our chief rivers would rise in rank. Certainly I do not find it among the list of ports mentioned in the Sailing Directions of British India. In reality, however, the existence or otherwise of the port will not settle the existence of the Brahma-Pootra fowl in that district—which is the real question at issue. As far as I can learn from naturalists and others acquainted with that part of the world, no such race of bird is to be found there. If it really does exist, surely there ought to be some more satisfactory evidence of the fact than has hitherto been forthcoming.'"]

Dismissing the question of Luckipoor, therefore, with the simple remark that the advocate of Burnham's tale should have looked up his Indian geography *before* finding fault with Mr. Cornish's; and noting very briefly that it is scarcely matter for wonder the name of ship and sailor should be forgotten, since no one would have supposed more than twenty years ago that they would be so imperiously demanded; what *is* of importance would seem to be the position and trustworthiness of Mr. Cornish; and this we cannot show better than by quoting part of another letter to ourselves from that gentleman, which has never before been published. The letter itself is dated New Britain, Connecticut, April 12, 1870, and we ought to add that we have verified its statements from independent sources:—

"As my name has appeared in this country and in England in connection with the history of the Brahmas, I beg you to allow me a word for myself.

"My letters to Dr. Bennett and others, from which you make extracts, were called for, written, and published at an early day, when the parties who brought them (the Brahmas) from India to New York, and from thence to Hartford, Connecticut, were *living and to be seen* by all men. They *were* often seen and inquired of by parties interested, and their statements were never discredited, nor doubted by any one except Mr. Burnham, and by him only by falsely stating that he originated them in his own yard.

"At the time the original pair of Brahmas were brought to Hartford, Connecticut, I was an officer at the Retreat for the Insane in that city; having in charge all the business of that institution, except that which belonged strictly to the medical department. I had purchased a farm of fifty acres for the institution, and thereon fitted up a large yard for the accommodation of rare animals, flowers, and birds; and had placed in them more than *sixty* distinct breeds (of fowls and other animals), in which I took much interest and pleasure. This I had done for the amusement of our convalescent patients. I had no pecuniary interest in bringing out the Brahma fowls, but saw at once that they were a distinct breed, and worthy of a high place."

We have already seen that Mr. Cornish's statement was published long *before* Burnham's. It gives a perfectly clear, consistent, and simple account of the origin of certain birds, which are proved by independent testimony to have been all obtained from the State of Connecticut; and the obvious question is, by what testimony save of the clearest, best supported, and most convincing character, may such an account be disproved? and is Burnham's sufficient to disprove it? We can only reply that no one but Mr. Tegetmeier in England ever attached to any statement of Burnham's the least importance whatever. Even he calls his great authority "unscrupulous," as well he might after the unblushing account* of the motives which solely dictated the "present to Her Most Gracious Majesty;" and among Americans themselves his book was never received with anything but a laugh at what was universally understood to be another attempt of the same sort at a trading puff. As an instance of this general appreciation of the man, we had quite recently an announcement from a valued American correspondent that "our old friend Burnham" had "let himself out again;" and were somewhat perplexed by the enigmatical information, until the receipt of a copy of "Burnham's New Poultry-Book," published in 1871, elucidated the mystery. This second book was, in all respects, worthy of the first, being a series of advertising puffs in the most approved "spread-eagle" style from beginning to end: and it especially amused us to note how the author had, with a most laudable regard to reciprocity, in return for Mr. Tegetmeier's unhoped-for quotation of the former work, repaid the favour by quoting *his* as ample "authority" on the very same point; each thus referring to the other, and to the other alone, as confirming his own views! It is the simple fact that not one American writer (and but one English) ever regarded Burnham's account as of the slightest value.

* It begins thus:—"Finally the idea occurred to me that a present of a few of the choicest of these birds to the Queen of England wouldn't prove a very bad advertisement for me in this line. I had already reaped the full benefit accruing from this sort of 'disinterested generosity' on my part towards certain American notables."

Whether the latter may have bred, amongst others, very tolerable *imitations* of Brahmas, is, as we before observed, not the question. We have seen that there were two qualities of birds known in the early days—one a spurious, which bred mongrel progeny, and could be traced to Burnham; the other pure, which was always traced to Connecticut, or a little later to Dr. Bennett, who procured his from that State. But such, and accounts of such published after the pure Brahmas were even publicly shown, cannot invalidate a consistent and credible account given from the very first of the genuine strain; and, as Mr. Cornish justly argues, confirmed and inquired into at the time and on the spot, while all the witnesses were alive and available for examination. Burnham himself states in his last work that he was a member of *that very committee*, at Boston, which was appointed in 1850 to settle the name, as mentioned in Mr. Cornish's letter to Colonel Weld. He says that the name was thus given by them "against his protest;" and the unavoidable conclusion from that simple fact alone must be, that parties *who knew both* considered Mr. Cornish the most reliable witness of the two.

The objections urged by Mr. Tegetmeier to the accepted view are certainly of greater weight than Burnham's "Narrative," but are still ludicrously insufficient to overthrow it; they remain objections, and no more, while most of them admit of complete answers. Thus, when that gentleman, in the face of the preceding statements and facts, most of which were accessible to him, affirms that "there is *not a particle of evidence* to show that they came from India," it is impossible to deal with such an assertion in any serious manner. When he further alleges that "the banks of the Brahma-Pootra have long been in the possession of the British, and no such fowls were ever seen in that locality," this, too, is both totally irrelevant and altogether contrary to well-established facts, considering, on the one hand, the many years during which the Chinese ports had been open to "the British," while it was only in 1847 (the very same year Mr. Chamberlain's first Brahma chicks were hatched) that the first strains of real Cochins were imported; and, on the other, the many published statements (also accessible to Mr. Tegetmeier) that "such" fowls *had* been seen in India. Thus, a clergyman, in May, 1856, published a letter in the recognised poultry organ, stating, "A relation of mine was looking at my fowls last summer, and on my telling him that Brahmas were considered by many only a variety of Cochins, he remarked, 'I remember them when I first went to India, more than *forty years since*, long before Cochins were heard of here; but they were considered a great rarity.'" There are other published letters to a similar effect, and one stating that they had been seen in Ceylon. Still further, when the same writer quotes Mr. Cornish's letter already given (though without the usual courtesy of acknowledging the source whence he obtained it) as "acknowledging" that Brahmas "were first exhibited in Boston under the name of Grey Chittagongs, in 1850," it is scarcely needful to remark that the matter in dispute is not a question of *name*. When Burnham said that the Dark Brahmas were formed by a cross between Grey Chittagongs and Cochins, he meant by Chittagong the large, ugly, grey fowl then passing by that title in America, and which at that date was a coarse variety of Malay crossed with Dorking, and not, except in size and general tint, like a Brahma. The simple question is, whether there is, or was, *any pure breed in India* of the Brahma type; and we had a curious instance quite lately of this singular misapprehension of the point, which may serve also as additional proof that there *are* some "particles of evidence" of the fowls coming from India. It reached us in the shape of a letter from an aged Indian officer, who had read our monograph on this breed with interest, and who wrote to us to say that we were mistaken in our view; that the fowl "was the Chittagong breed, of which he had seen hundreds in India, only not so truly bred as these new-fangled specimens." The writer of this evidently thought he had overturned Mr. Cornish's account, and his literal accuracy could not be

doubted. When young he had been an ardent cock-fighter in India, and paid much special attention to Indian fowls generally; but his latter years had been occupied solely with the duties of a Christian ministry, and he literally snatched a few moments from "preaching the faith which once he destroyed," to assist as far as he could* an object he knew to be of importance to a friend, though he himself had long ceased to feel much interest in it. The least failing in truth would have been abhorrent to him; yet this sentence, which he considered to be contradictory of our own view, conclusively established the only real point, that there was in India, by whatever name there called, a pure breed of fowls resembling the Brahma.

Another objection urged by Mr. Tegetmeier is strictly philosophic, and of far more force. "It has been remarked," he says,† "that it is a fact universally recognised by comparative anatomists that the distinguishing characters of nearly-allied varieties are more strongly marked in the bones of the skull than in any other part of the body. Now the skull of the Cochin is vaulted and arched, both from before backwards and from side to side, and possesses a peculiarly-marked groove, extending from before backwards on the frontal bone; and—what every anatomist will regard as a character of great value—the long axis of the aperture through which the spinal cord issues from the skull is the perpendicular one. Now in these characters the skull of the Brahma is

COCHIN. GALLUS BANKIVA.

Fig 62.

identical, whereas in all ordinary breeds of fowls the long axis of the occipital foramen is placed transversely; the skull wants the distinguishing frontal peculiarities, and the remarkable arched or vaulted character found in both these breeds." In order that this argument may be fully understood, we have had engraved, from examples given by Mr. Darwin, the occipital foramen of a Cochin and of a *Gallus Bankiva* (which may be taken as the ordinary or typical form), both being of the natural size. It will be seen that not only is the vertical axis of the aperture longer in proportion in the former, but it partakes of a triangular character, which is not seen in the other bird. Here then is a formation which if unique would unquestionably be of great value in deciding as to any great distinctness of race; though in this case it is not meant to be denied that the Brahma and Cochin are very closely-allied races, while not identical. But when we examine further, Mr. Darwin himself tells us‡ that the skull of the Dorking not unfrequently exhibits the peculiar Cochin shape of the foramen; that in some varieties of Bantams the character is almost constant, and that it occasionally occurs in other breeds. But are *these* therefore Cochins? To ask such a question is to see at once that, however imposing at first, little or nothing can be based upon this argument.

The very statement in its broadest form that the two varieties of Brahmas "had unquestionably very distinct origins," is known to every breeder of the fowl to be untrue. In the first place, the two varieties, however distinct in colour, are still to a great extent interchangeable. Miss Watts,

* The plate of the Indian Game Cock, with several others relating to fowls and cock-fighting in India, came to us from the same kind hand.

† "The Poultry-Book," p. 63.

‡ "Variation of Animals and Plants under Domestication."

whose strain is probably the only British one which has never been crossed, assured us in the most distinct manner that she never had but *one* stock, from which by selection she has bred both Dark and Light. Mr. Joseph Hinton, another breeder, who has lately given up Brahmas, but whose experience also goes back to their earlier days, informs us that his birds were originally Light, being obtained from Dr. Gwynne, Mr. Garbanati, and others. Later he obtained a medium-coloured or somewhat darker cock from Mr. J. K. Fowler (also an early breeder), from which and the darkest of his Light hens he bred a most beautiful Dark cock, and hens so densely marked as to be nearly *black;* and from this progeny again were bred his well-known Dark cock, "Champion," and hens as we see them now. Thus he had *transformed his strain* from Light to Dark within a space of three years. We have found in our own yard that we could soon breed *black* Brahmas if such were desired, or, on the other hand, that in about three seasons, by choosing the lightest birds, we could produce almost clear white; and as the original birds were somewhat *darker* than the Light birds now shown, either colour would have been bred from them with still greater rapidity and ease.

Another conclusive proof of the original unity of the strain is found in the peculiar white lacing or border to the upper pair of feathers in the cock's tail. The first to point this out as a characteristic of the best strains of Light Brahmas was undoubtedly Mr. F. Crook, but he appears (not being a Dark Brahma breeder) to have had no suspicion that the same peculiarity was often found in the Dark breed; and this discovery was, we believe, first made by ourselves. It is now not uncommon, and the beautiful Dark cockerel selected for portraiture in this work possessed this very peculiar feature in perfection, though "as black as a coal" in all the under parts of his body. The common possession of such a very characteristic and peculiar point as this is about as strong evidence of a common origin as could well be. The feature would be far more frequent in Dark birds but that for many years all breeders endeavoured to banish it, confounding it with the ordinary blemish of "white in the tail." We have been expressly told this by themselves; and it is confirmed by the fact that since we pointed it out as rather a beauty to be cultivated, it has become comparatively usual again.

We may add that Burnham published a letter in September, 1870, apparently (though not confessedly) on account of the statement of facts and arguments we had issued in the beginning of the same year, in which he affirms the black-breasted cocks, now admired by fanciers, to be a *third* variety or cross. "I am firmly of opinion," he says, "that this recently-marked, dark-breasted Brahma strain of fowls, which is so greatly admired among some fanciers, and of which several trios have of late come out from England, are skilfully bred in Ireland and England from the dark China hens they have had there, with the dark-plumed Grey Dorking cock, producing *this* variety (so closely resembling the latter in many points), and upon some of the first of which there not unfrequently appeared the notable fifth toe of the Dorking, now bred off again by cautious selections. . . . . I shall not change my opinion in this matter until I can learn or unlearn more than I *now* know of the 'Dark Brahma' strains of the present time." To every breeder of the fowl, it will be at once evident that the amount of knowledge here hinted at is not great; in fact, nothing could better show Burnham's ignorance of *the fowl itself* than this opinion. The reference to "Ireland" would appear to be pointed at Mr. R. Boyle, who certainly was the first breeder who made the black breast fashionable; but none of his birds ever showed the Dorking toe, or any other evidence of the black breast being so derived. We further on speak of the Dorking cross as now and then met with, and we had done so years before any other writer* detected it—indeed, we

* We say any other "writer," because Mr. Teebay had pointed out the cross to us verbally years before.

have a strong suspicion that from us Burnham "borrowed" the very idea—but it was attempted for far other objects than that stated by him, and every breeder soon gave it up in disgust; moreover, it was always the Brahma cock and Dorking hen which was thus employed. That Mr. Teebay for many years rejected from preference numerous black-breasted cocks in favour of speckled ones is known to all intelligent fanciers, and also the fact that every good strain breeds *both*. We still prefer a slight mottling ourselves for breeding pullets, while no doubt the black-breasted cocks look best for exhibition. Either can be bred with the greatest ease; and the assertions which Burnham elsewhere makes still more broadly, that most of the English birds exported to America bear evident traces of the Dorking, is an offensive and libellous falsehood, without any foundation whatever except the desire to puff off his own strain, which he does constantly. On the other hand, the persistence with which he attacks what he calls the cross, and insists on the preservation of the *pure* Brahma, is, to say the least, amusing in the very man who has been the sole source of the supposition that this identical "*pure* Brahma" is *itself a mongrel* of his own creation!

To sum up, then: when to the foregoing conclusions are added the facts that all Mr. Burnham's early Light Brahmas (until, as is known, he bought through a friend at Boston in 1852, some of the real strain) were single-combed, while the originals were triple; that Burnham's had a distinct straw or buff tint, while the originals were white; and that Burnham's had the same creamy-coloured fluff, while real Brahmas were and still are a pearly grey under the plumage; the whole becomes clear. It is plain that there was a strain of real Brahmas, distinct from Cochins or the fowls *then* known in America as Chittagongs (we say then known, because our Indian friend's remark makes it far from improbable that some *previous* importation of the Brahma or real Chittagong had given to the fowl so-called part if not the whole of its character—that our very fowl, in fact, had been imported before, but from want of interest in poultry so *degraded* as to be unrecognisable), all which were traced up to the birds brought into Connecticut by Mr. Chamberlain; that Burnham, having as is clearly proved vainly tried to purchase some of this stock, bred the best imitations he could, which formed another strain, always at that date clearly distinguishable from the real, and well known to be distinct both by himself and by others; and that, finally, he claimed for his the credit of being the original birds, and unfortunately found in England what he never could in America, a respectable writer who would without question adopt his tale. No other conclusion is hardly possible to any one who has passed in review the whole evidence, from which we have extracted a small part in the particulars here given.

The Brahma and Cochin being confessedly closely-related races, it is rather interesting to estimate their relative antiquity; and looking at the various facts simply with the eye of a naturalist, nearly all will be found to favour the superior antiquity or purity of the Brahma. The pea-comb alone is almost conclusive evidence of this, when considered in relation to the fact already mentioned as established by Mr. Darwin, that "the very act of crossing gives an impulse to reversion, as shown by the appearance of *long-lost* characters." After a long and laborious investigation, we have ascertained that this triple or pea-comb has been found at different times on the pure Malay breed; on (very rarely) the pure Cochin breed; more frequently on the Malay and Cochin cross; on the so-called Sumatra Game Fowl; and on two mongrel birds. One of the latter was about seven pounds weight, black-red in colour, with olive legs and five claws on each foot, showing very plainly a cross of Malay and Dorking. In each case except one of the mongrels (whose parentage was simply undistinguishable) one of the Asiatic breeds was known to be implicated; and in fact it thus appears that each of the great Asiatic races, *when crossed*, and more rarely even when pure, has produced the pea-comb by reversion. The conclusion is irresistible, that this pea-comb belonged to

some ancient race of fowls, formed no doubt by careful breeding and domestication, and which was probably developed into the Cochin by the Chinese on the one hand, and *possibly* into the Malay on the other—the Cochin branch becoming still more downy in feather and quiet in habits; while the Malay, on the other hand, became closer in plumage and lost the leg-feather, or may even have been formed by crossing back with the *Gallus Bankiva*. Any naturalist with the knowledge of a fancier would see many reasons we cannot give here for both suppositions.

The importance of this matter, as we noted at commencing, with regard to the whole subject of the origin of species, must be our apology for devoting so much space to it, though in this we have only followed the example of others. We may now proceed to consider the breed practically in detail. In doing so, many of our remarks will be found nearly identical with what we have previously written for a special work on this breed,* for the simple reason that having been *then* most carefully considered, we can find little room for improvement. We shall, however, neither strive to avoid actual quotations nor to make them, but adopt or modify our own remarks as seems best, taking no further notice of their previous publication than this general allusion, and adding or varying wherever change of circumstances seems so to require.

Both Dark and Light varieties of the Brahma should be precisely alike in size, shape, and carriage, as are the different varieties of Cochins, only differing in colour. The Light breed, it is true, has till lately been far behind the Dark in these respects; and it has even been attempted by Light breeders to urge that their variety should be judged by a less stringent standard, but for this there is no ground whatever. Light birds have been bred as large and fine as the Darks, and may be again; while in America they surpass the Dark on an average in size, though as a rule inferior in shape. It only needs judgment in mating and care in rearing, to breed them as fine as ever; and we have been glad to see several breeders of late have adopted our frequently published recommendation, and by obtaining a cross of the large though rather coarse American stock, have made great gain in point of size and vigour. A full-grown cock of either breed cannot be regarded as up to exhibition standard if he weighs less than twelve pounds, while hens should weigh eight to ten pounds. Cockerels six months old should weigh from seven to nine pounds, and pullets six to eight pounds. These are very good weights, and after long experience we have not the slightest hesitation in saying that for all *practical* purposes birds which reach these weights are to be preferred to heavier; but they will very often be exceeded, and cocks have been known to us which have reached fifteen, sixteen, and in one case just over eighteen pounds, while many hens have been known to turn the scale on twelve pounds. Of course, if such birds are fine in their other points they are very valuable for exhibition, and there cannot be a doubt that the Brahma may easily be made to attain a greater weight than any other breed, not excepting the Cochin; but as a rule we have found that moderate-sized birds are healthier, more prolific in eggs, keep their plumage in better order, and generally breed *finer and larger stock* than the very largest birds. We say as a rule, because there are occasionally found birds which have grown very large without any special feeding, and breed naturally a large stock, with no apparent loss of fertility. Such are to be valued, and by their means a large strain may be established and perpetuated; but *forcing* size in this breed is to be especially condemned. The effect is nearly always to make the plumage soft and slack-looking; and as the Brahma, unlike the Cochin, is a *close-feathered* breed, one of its great beauties is thus to a great extent lost.

The head of the cock cannot be too small in proportion to the body. This point is not easy

* "The Brahma Fowl: a Monograph."

to attain, and is of great value as a sign of high breeding, being generally accompanied by fineness of flesh. The top of the head should be rather wide, with a slight fulness over the eye, but not so much as to cause a cruel or Malay expression. The whole head should be rather short and well arched; a long head looking mean, and disfiguring many otherwise fine American birds. The comb—known as a pea-comb—is peculiar, but is simply described as resembling three small combs joined into one, the centre one being higher than the two outside. It is very difficult, in the cock especially, to get this point to perfection until a strain has been bred for years. No pure strain ought to breed a solitary comb in which the peculiar triple character is not perfectly distinct; but there is a constant tendency to grow too large, or crooked, or otherwise misshapen, which requires to be guarded against like any other fault, if even tolerable symmetry be desired. We remember once seeing a cup cockerel, in which the triple character of the comb was just discernible, the member resembling an almost shapeless mass of red putty, the size of a moderate egg, and hanging considerably over on one side. We would never press a merely fancy point too far; but considering how highly typical the pea-comb is in this breed, we would never breed from such a bird, and would hesitate much to award a first prize to one, though combs far short of perfection must often be tolerated for the sake of more important points.* In a perfect comb the centre ridge should be absolutely straight, and the whole so low as to be perfectly firm and free from shaking, however quickly the bird moves his head. We would prefer half-an-inch in height, but even three-quarters, if straight and well-shaped, makes a beautiful comb; above that we should say there was a tendency to getting too large. With regard to the shape of the comb, some prefer a uniform rise from the front towards the back, ending in a peak something like that of the Hamburgh, though not so sharp or defined; and this is the original, and, till lately, the usual American type. But we like far better to see the comb, after rising for half or two-thirds of its length, decrease again towards the back, thus forming a kind of arch; and this form of comb not only, as we think, looks better to the eye, but is far more likely, according to our experience, to breed well than the other, which has a tendency to grow larger each successive generation. The arched comb is now almost everywhere preferred to the peaked. There were till very lately some splendid yards of single-combed Light Brahmas in existence, which we think would run some of the present exhibitors a close race for prizes; but single-combed birds are now almost lost, and stand no chance whatever at a good show. The comb should be handsomely set above neat and cleanly-cut nostrils, the beak being rather short, thick at the base, and with rather a decided curve: but too much curvature, or what is termed a hawk-bill, is a great blemish, giving a sinister aspect to the bird.

In all the original Brahmas the deaf-ears fell below the wattles; and this point was even mentioned by Dr. Bennett as a characteristic of the breed. It is often seen so still, and the perpetuation of this point should be carefully sought as far as possible; but a prominent place cannot of course be given to so secondary a character.

The neck of the cock should be unusually full in the hackle, and as much arched as possible, giving the appearance of stately pride. Just below the head, the hackle should start out with a very convex and clean sweep, making the junction of the head very distinct by an apparent hollow or depression. It should be long, and full enough to flow well over the back and shoulders; and with its full and graceful curve, which is almost peculiar to this breed, and rather reminds an observer of the neck of a spirited horse, adds greatly to the noble carriage and appearance of the bird. The neck may be either rather long or rather short, according to the general style of the

* Since the decided expression of our opinion on this subject was first published, there has been a most marked improvement in Brahma combs generally, proving that fanciers only needed to have their attention drawn to the subject.

bird all over; each has its beauties and its admirers, and each has contended successfully in the show-pen. The short neck harmonises best with a square compact body, somewhat resembling the Cochin in character, and is well shown in our plate; while a somewhat long neck, well arched, and combined with the proper type of tail, gives, in our opinion, a more commanding and noble appearance. Such birds used to be bred by Mr. Teebay, and their lofty stature and bearing, with their proud and springy gait, were something to be remembered. We sometimes see them even now, and all that needs be said in regard to this point is, that the whole contour of the bird should be such as harmonises well and makes a pleasing whole.

The back should be wide, and flat across, but very short, the saddle appearing to take its rise almost from the base of the neck. A round back is of course a great deformity, and so is want of width, a narrow bird being of very little value. The saddle must be very broad, and *rise* well towards the tail, without which there cannot be true symmetry and proportion. We have seen cocks with the back and saddle actually sloping downwards to the tail, which looks especially bad, being contrary to the haughty carriage so conspicuous in this breed. The saddle-feathers should be long and abundant, so as to flow well over the points of the wings.

The proper tail of the Brahma cock is very peculiar, though it is very rare to see it approaching perfection. Some breeders appear yet to aim at the horizontal soft tail of the Cochin; but since we drew special attention to this matter a few years ago, we have been glad to see much improvement in that respect, and especially that Cochin tails have been much discouraged by our best judges. The true tail has been variously described, but usually by saying that it should open out laterally, the sickles especially, "like a fan." It has also been said that the tail thus spread open resembles that of the black-cock; but, in reality, the resemblance was originally far more close than this would imply. By Mr. Teebay's kindness, we were enabled to give a clear description of the Brahma tail as it used to be; and since then we have seen it approached on several occasions, and have once or twice bred it ourselves, though it is not yet easy to produce, having been for a time so nearly lost. "The true inside tail," he says, "I like closed, except the two highest feathers (sometimes *four* used to be so). These should be very broad, and lay nearly or quite *flat*, not too long, and the ends turning outwards each way, and projecting on each side *through* the curved or sickle-feathers. Such feathers are never seen except in tails set much more upright than most exhibited now. They were very subject to be broken in the exhibition baskets or pens, on account of their projecting through the other feathers. The whole inside tail spreading out, as was also often seen, I do not like. I have frequently noticed the feathers crossing in the lower part and *re-crossing* again higher up, as in the sketch. When there are two pairs the higher pair is generally rather smaller, and they do not actually cross, though there is always a similar peculiar bend, which is, I believe, caused by their being set into the rump so near to each other, and growing together while the young quill is hardening." From the sketch and actual feathers which were sent us with these remarks by Mr. Teebay, we add a representation of these peculiar black-cock feathers which belonged to one of his own old birds. If the drawing (Fig. 63), which is exactly two-thirds the natural size, be raised till nearly upright, what is meant by this eminent judge and breeder will be readily seen, and the resemblance to the tail of the black-cock will appear marked and striking. Indeed, the heads of the pullets, the very character of their pencilling, the feathered shanks of both sexes, and the tail of the cock, offer repeated and cumulative points of resemblance to the grouse, which furnish one of the most singular examples of what Mr. Darwin terms "analagous variation" in widely different species known to us throughout the whole range of natural history.

The breast of the cock should be deep, full, broad, and rather projecting, the breast-bone

being set well down between the thighs. The shoulders should be somewhat prominent, so as to make the back a little hollow between them when the bird stoops, and give a handsome proportion. The wings ought to be of medium size, and well tucked up, so as to make the bird look neat and trim. Disordered flights are a great blemish, and birds with any feathers actually twisted should be disqualified. The thighs should be well covered with fluff, though not quite so loose and downy as in the case of Cochins, and the hocks ought to be entirely and neatly covered with soft curling feathers. We are glad to see that bare legs are now quite discarded by judges, and we would ourselves prefer vulture-hocks to such a disgusting fault. The vulture-hock is, however, a great blemish undoubtedly, and none but an unusually good bird should win any prize when thus disfigured;

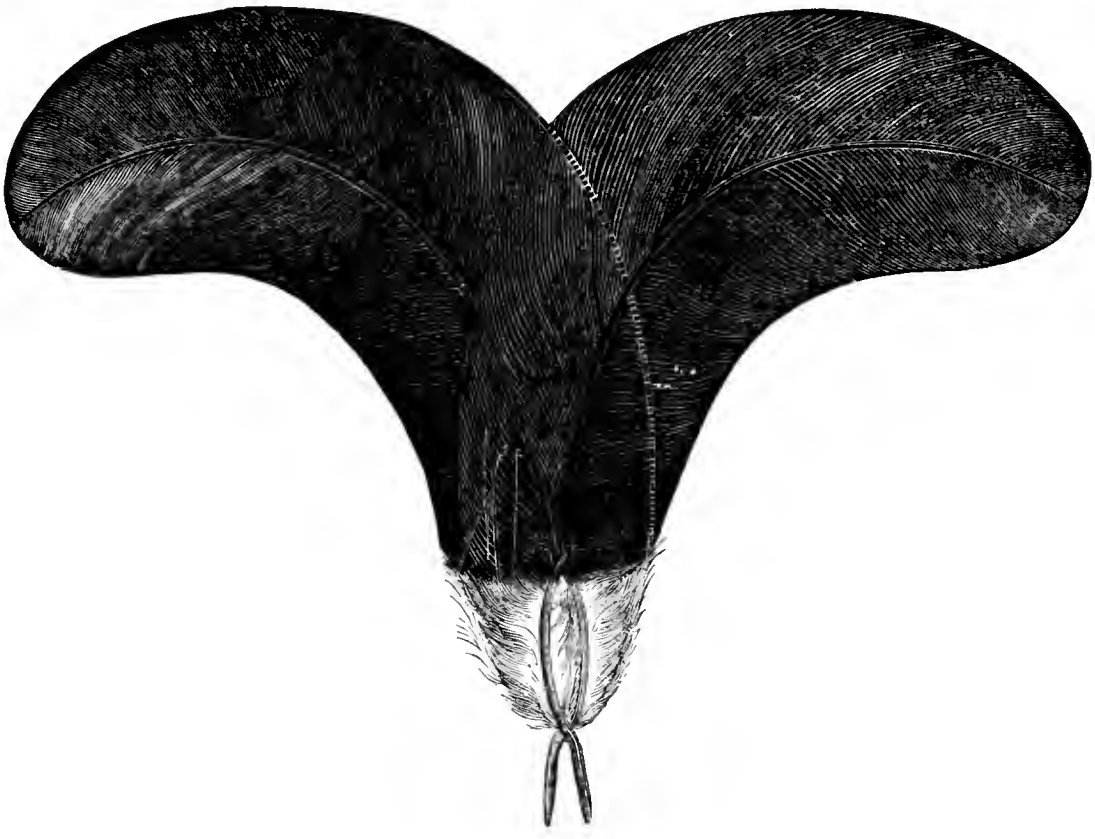


Fig. 63.

but only stiff feathers projecting so as to form a spur on the limb are to be so regarded, and soft curling feathers, however plentiful, are only a beauty to be desired. The shanks should be of moderate length, and feathered as heavily as possible, down to the ends of both outer and middle toes. Too short shanks in the cock look decidedly bad, but it is rather hard to fail in this respect. The shank-feather should "stand out" well, not take a perpendicular direction, else it does not show properly. We have frequently seen both the inner and back toes feathered in the case of hocked birds, and we once ourselves bred a bird perfectly free from hock which was thus furnished, and have known pullets also present this peculiarity. On the other hand, some very heavily-feathered birds have the middle toe bare; and while this is not desirable, they are not therefore to be discarded. We need scarcely say that the thicker the shanks are the better. Very large cocks are generally somewhat long in

the leg, and if the length be not *too* great we do not object to it, provided it is not, as is frequently the case, associated with too long a back, or other defects in shape.

The shape and carriage of the hen should correspond with that of the cock, allowing for the difference of sex. Her head should in particular be as small as possible, this point being of much greater moment in her case, with the same slight fulness over the eye, giving to the face an expression we can only describe as "arch," but at the same time peculiarly sweet and gentle. We like the head short and well arched; in fact, almost exactly that of a grouse, with the beak also rather short and curved, but not too much so. The neck in her case should always be short, and with the hackle spreading out very full at the base, and flowing well over the back and shoulders; the back flat, wide, and short, as in the cock, with a very broad and ample cushion, resembling somewhat that of the Cochin. There is, however, this difference, which is characteristic, that whereas the cushion of the Cochin rather droops at the extreme end, burying the tail, the cushion of the Brahma rises to the last, the short tail rising nearly upright out of the end, so that the lower feathers of the tail are further behind than the upper. What we mean is seen exactly in the portrait of the Dark pullet which illustrates this chapter. Many of the pullets shown are nearly destitute of cushion, and narrow in the stern almost like a Spanish fowl; these birds occasionally win from excellence in pencilling, but we cannot consider them good Brahmas. The shoulders should not be too sharp, but very neat; and the wings tightly held to the body, and well tucked into and nearly buried in the cushion above and the fluff of the thighs below. A "slab-sided" bird is not to be tolerated. Breast as broad, deep, and full as possible, with the crop low down, and the breast-bone well down between the thighs. The fluff ought to be very abundant, and stand well out, covering the hock precisely as in the cock. A Brahma hen *must* be short on the leg: legginess may occasionally be tolerated in an otherwise good cockerel; but a leggy hen is of little value either for show or for the breeding-yard. In both sexes the shanks should stand as wide apart as possible, any approach to knock-knees being instantly disqualified; and the feet should be rather large, with straight well-spread toes.

We have now to consider separately the distinctive markings and breeding of the two varieties of Brahmas.

LIGHT BRAHMAS.—The head of the Light cock should be white, the hackle silvery white, with a *distinct* black stripe down the centre of each feather. The shoulder-coverts, back, breast, thighs, and under parts are white on the surface, but the fluff or under-part of the plumage down to the skin is dull grey. The secondaries or outside wing-feathers are white on the outer web, and black on the inner web, causing the wing to appear pure white when folded; the primaries or flights black. The saddle-feathers may be either white, or (and this is rather to be preferred) white *slightly* striped with black; tail-coverts glossy green black, those next the saddle being silvered on the edges. The tail should be rich glossy green black, with the two top feathers finely edged with silvery white, the white line being sharp and even all round, and about one-sixteenth of an inch in width. This point when perfect is a very great beauty, and generally a sign of good and careful breeding, but it is now so rare that it cannot be insisted on. The shape of the tail is already described; in default of that conformation, what would be sickles in another breed should diverge laterally like the tail of the black-cock; but in either case it should be nearly upright, and the tail of the Cochin is not to be sought after. The shanks should be *bright* yellow, the feathering being white slightly mottled with black. Perfectly white shank-feathering is, if possible, to be avoided.

The hen should have a pure white head, the brilliant red of comb, deaf-ears, and wattles contrasting very distinctly. The neck-hackle should be the same clear white; distinctly, darkly,

and broadly striped down each feather, the black stripe ending clear and sharp at the base, so as to form a kind of dark necklace. All the body-colour should be a clear white surface, with an under ground-colour of grey, the primary quills being black. The tail is also black, except the two top feathers, which ought, if possible, to be edged with white on the top edges; but this is not to be too rigidly insisted on. The shanks, like the cock's, should be a bright yellow colour; and the feathers white, very slightly mixed with grey or black. Except the neck, tail, and the little black or grey on the leg, the general appearance of both sexes should be a clear white all over, any tendency to yellow being a great defect. The latter colour exists naturally in some strains, and is distinct from the sun-burn which hot weather will produce even in good white birds.

The Light Brahma is so extensively bred in the United States—more generally, perhaps, than any other breed—that a few remarks on the American and English types as compared become almost necessary. The American birds are, as a rule, much longer in the leg and back, and therefore less compact in shape, than the English; but (no doubt as a direct consequence of this) are bred to a far larger size. An imported cock was shown in 1872 which exceeded *eighteen* pounds' weight, and twelve and thirteen pounds are not at all unusual weights for hens. Hence American birds make valuable crosses to gain size; but we must confess our own predilection for the square and compact English form, when bred to a satisfactory size, which there is no real difficulty in doing. The American birds also differ somewhat in colour, being described by United States' fanciers themselves as almost exactly the colour of new milk when drawn from the cow, not the bluish colour of milk when skimmed of the cream. In England, on the contrary, this very pearly or bluish-white colour is most preferred, as it is also by some American fanciers, being much less apt to run into deep straw-colour in the cocks. American birds are also very often too long in the head, which greatly detracts from their beauty of expression. Probably the most perfect standard of perfection would lie between the two extremes as regards shape; and there is little doubt that overmuch seeking for short-legged cocks has seriously diminished in size several good English strains: but neither, on the other hand, can we admire the long, rangy, raw-boned look of some American importations we have seen. We should rather advise the mating of fine long-bodied American hens of ten or twelve pounds' weight, with a broad-backed, short-bodied, and very short-legged English cockerel of a good pearly colour, taking especial care the male bird had a broad and rising saddle. From such a cross, if rightly chosen for breeding colour, valuable results may be secured. A long, rangy American cock may also be put with compactly-built hens for the same purpose; but we would prefer the cross first mentioned.

The chief difficulty in breeding Light Brahmas is to obtain a sufficient amount of black marking in the hackle, without producing colour where not wanted. The natural tendency of most poultry is to breed lighter and lighter; but if, to counteract this, cocks be chosen with densely-striped hackles, and saddles also striped, and mated with dark-necked hens, the almost inevitable result will be pullets with backs and other parts spotted or splashed, and cockerels with black spots on the fluff, in the wing, and other undesirable places. The best plan, at all events at commencement, will be as follows:—To breed pullets, put a cock with narrow but tolerably distinct stripes in his hackle, saddle quite clear, and leg-feathering nearly white, with hens so darkly striped in the neck as to be unfit for exhibition, or if they can be got so dark, entirely black, even in the very fringe, as in one of the feathers shown in Fig. 64, which was plucked from a fine American hen. From such a cross, hackles resembling the other feather in Fig. 64 will be produced, and so far as regards colour nearly every pullet will be fit to show; while a fair number of good cockerels may also be expected, but not marked enough to be considered really perfect birds. To breed cockerels for showing, on the contrary, a cock should be selected with

stripes in his hackle of a very solid character, and defined stripes in the saddle also, if possible; and mated with hens too light and cloudy in the hackle, and entirely free from any colour on the back. From this mating hardly a cockerel will miss as regards colour, but most of the pullets will have backs more or less speckled; except in rare cases, not to be counted on, when birds seem to "breed well" with no trouble at all. The colour of the grey under-fluff should also be carefully examined. It will be found that this varies, in some birds being of a very dark grey, and in others of a very light pearly grey. In many cases the dark grey under-colour goes with the darker surface-marking, but this rule is not by any means universal; and if two birds be on the surface apparently *both* too dark to be mated with success, for fear of producing dark splashes or specks, yet supposing one—say the cock—be of a dark under-colour while the other is light, the experiment may often be made with success. We think, in fact, this rule will usually be found safe; but as we once knew a marked exception, we do not like to state it too broadly. By attending to this

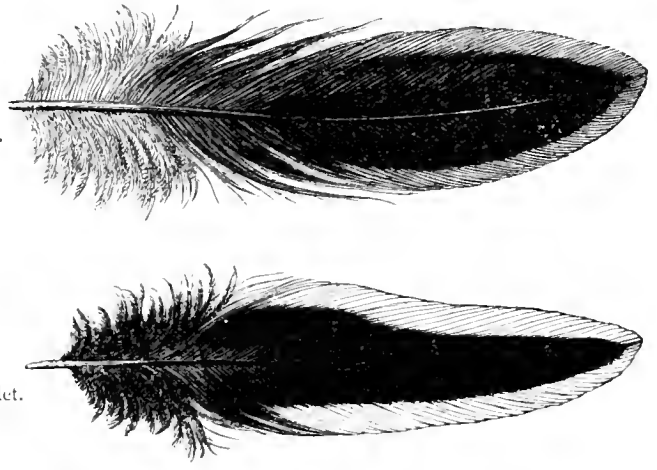


Fig. 64.

qualifying point, in a few years it will be possible to breed from the *same* stock both cockerels and pullets of a beautifully-marked character, the cocks usually having white saddles with barely perceptible traces of black; and by then always mating well-marked birds on *both* sides, but with under-colour rather dark and light respectively, this valuable quality may be perpetuated.

The only cross that is likely to be met with in choosing Light Brahma stock is that with the White Cochin, which we are satisfied has contaminated more or less very many birds. As this has been denied by some experienced breeders, we think it right to state that we have the avowal in writing of a well-known winner at Birmingham, that some of his best birds "were bred from a Dark Brahma cock and White Cochin hens;" and of course such a cross must not only affect his own strain, but would communicate the taint to any others which might be recruited from it. The evils of the experiment would be more apparent after two or three generations than at first, as chickens quite correct in marking are often produced by such a cross; but the effect of reversion is always seen afterwards in single combs, dark or sandy patches of colour, light hackle, and deficient breast. The latter is, on the whole, the best test of a cross, which may be also detected in many cases by the ground-colour of the plumage being white instead of grey; and if the two defects be found together we should regard the evidence of a stain more or less remote as perfectly conclusive. Another very characteristic evidence of a Cochin cross is the shape of the cushion, which in Brahmas ascends more and more till it rises into the nearly upright tail, whilst in crossed birds it

frequently rather droops over; but as true Brahmas occasionally present this conformation, too much stress must not be laid upon it.

Light Brahmas, like White Cochins, need plenty of shade, to keep the cocks from turning off to that objectionable straw-colour we have already referred to. To show them to perfection they also need a country grass-run; and if in such circumstances, need no preparation for show whatever, beyond washing their heads and legs. They will however keep much cleaner than White Cochins in the smoke of a town, being harder-feathered birds.

Our portraits are taken from some sketches and photographs of a splendid pair of American birds, which combined the grand size of the Transatlantic strains with unexceptionable colour and shape. The cock won not only in his own class, but as the "best Brahma on exhibition" at Philadelphia in 1871; also first prize at Pittsburg in January, 1872; and has been pronounced by good judges one of the best, if not the best ever bred in America. Both birds have won many other prizes, and the hen when in good condition weighs nearly thirteen pounds.

DARK BRAHMAS.—The head and neck of a Dark Brahma cock are very similar to the Light, the head being white and the hackle striped, but somewhat more so than in the Light breed. The back is nearly white, a little black appearing here and there; while between the shoulders the black ought to predominate, but is nearly hidden by the hackle flowing over it. The saddle-feathers are like the hackle, silvery white, striped with black. Many breeders prefer only a *little* stripe in the hackle and saddle-feathers, and such are the most showy birds for exhibition, while they will often breed good pullets if other points are correct; but, on the whole, we greatly prefer a good distinct dark stripe in every feather. As the feathers approach the tail the stripes get broader, till they merge into the tail-coverts, which are rich glossy green-black, with a margin or lacing of white. The effect of this is very beautiful, while a "mossy" appearance of the coverts is not only unpleasant to the eye, but is inferior for breeding pullets. The tail itself is pure rich black with a green gloss, any white being a great blemish. This fault is hereditary in some otherwise good strains, and is, we believe, often caused by a remote cross with the Dorking; for in many cases where we have noticed it, we have seen other undeniable signs of the Dorking taint: but this will not account for many cases, where the blood is undeniably pure. The objection to white in the tail does not, however, apply to a silver margin or edge to the top sickles, which we have already described as proper to the cock in the Light breed, and is frequently found also in the best specimens of the Dark. When perfect this is a very great beauty, and very frequently accompanied by a fair black-cock type of tail. Sometimes, instead of a green lustre to the black of the cock's wings and tail, the feathers show *purple* reflections. As a rule such birds breed beautiful dark pullets, and the purple shade is not to be considered a fault.

The wing-coverts are black, forming a distinct black bar across the middle of the wing, while the ends of the secondaries, or the feathers which appear when the wing is closed, have a large black spot on the end, making the top edge of the wing also appear black. The remainder of the secondaries are white on the lower half and black on the upper, but the black of course is not seen. The flights are all black except a narrow fringe of white on the lower edge. There is often a little brown or bronze towards the top of the "bar," and at the end of the secondaries. As hereafter explained, this is often very useful in breeding dark pullets, and if not too plentiful is not to be considered a great defect, but if very conspicuous is almost a disqualification. There is also often a portion of brown on the shoulders and back; in such positions the colour should be condemned, being both unsightly and objectionable for breeding.

The breast may be either black, or black very slightly and evenly mottled with white; the

thighs and fluff either black, or black very slightly ticked or laced with white. The shank-feathering should correspond with the breast, being black if the latter is, and slightly mottled with white if not. The proper colour for the shanks is deep yellow, inclining to orange; but this can rarely be obtained except on a grass-run; and many Brahmas being reared in confinement, if the leg be moderately yellow it is sufficient.

The colour of the hen somewhat varies, according to the taste of each individual fancier. Mr. Boyle, for some years a very successful exhibitor, describes it in "The Practical Poultry Keeper' as a "dingy white ground, very much and closely pencilled with dark steel-grey." The effect of this is very beautiful, giving the appearance of a frosted or silver-grey; but there should be no appearance of pure white in the plumage except in the margins of the neck-hackles. Pullets of this colour are in perfection at about six to eight months old, but next season often acquire a very dingy tone which we much dislike. The hens also are of a dingy colour except for a month or two after moulting; but we have bred a few birds of this colour which retained their clearness of tint to the last, proving that with care in breeding the objectionable dingy tone might be got rid of. A more serious fault is that this colour is very apt to breed pullets with necks almost white for some distance down; and even below that very thin and uncertain in colour. These light-necked birds generally breed worse and worse; but the evil can easily be checked by choosing birds for breeding whose heads are distinctly marked.

A few years since some breeders, amongst whom were Mr. Lacy, preferred a decided brown colour for the hens; a tint which breeds true with much less trouble than the clear. This tint is occasionally shown with success, but being in the opinion of most fanciers much inferior in beauty to the clear colour, has nearly if not quite gone out of fashion, and it has lately become an accepted axiom that a clear ground-colour is the proper one for a Brahma.

Another colour is that which used to be shown by Mr. Teebay, and is generally much admired when seen in perfection, as it sometimes has been again of late years. The ground-colour in this case is itself a steel-grey, and the pencillings or markings a rich black, so intense as to show green reflections like the tails of the cocks. Sometimes there is a slight cast of chestnut in the ground, but the intense colour of the pencilling prevents this from looking the least dingy, even when the birds moult out as hens. The ground then often shows the chestnut tone, with a slight purple cast, but the birds look wonderfully rich even then. Other shades of marking also occur; and on the whole what we prefer is a variety of the first or silver-grey colour, in which the grey of the ground is of a perceptible *bluish* cast, and the pencilling itself so dark as to be nearly black. This colour, which may be denominated the blue-grey, usually moults out tolerably clear, the bright blue only giving place to a slightly duller slaty cast, which makes the hens of this colour show better than any, unless the very dark pencilling may be an exception.

The shape and character of the marking in Dark Brahma pullets also varies. In some birds the pattern is very thick and large, in others so small as to be barely distinguishable. We prefer a medium size, so that the pencillings can be clearly discerned at a distance of about twelve feet. The shape of marking, likewise, is found to differ, sometimes being nearly straight across the feather, as in pencilled Hamburghs, and in other cases being curved like a series of lacings. A medium character looks best here too, in our own opinion; and we append, by way of illustration, a series of feathers from one of the best birds we ever saw, and one which was never shown without winning. She was of the blue-grey colour we have already spoken of, and the feathers were plucked at the age of twenty months. (Fig. 65.)

A few American fanciers seem greatly to admire a feather for Dark Brahma pullets which, besides the regular pencilling, has a defined *edge* of dull white, considerably lighter than the rest of

the ground-colour. Two such feathers we have represented in Fig. 66, from specimens sent us some time since by Mr. E. C. Comey, of Quincy, Mass. The effect is rather peculiar, and gives

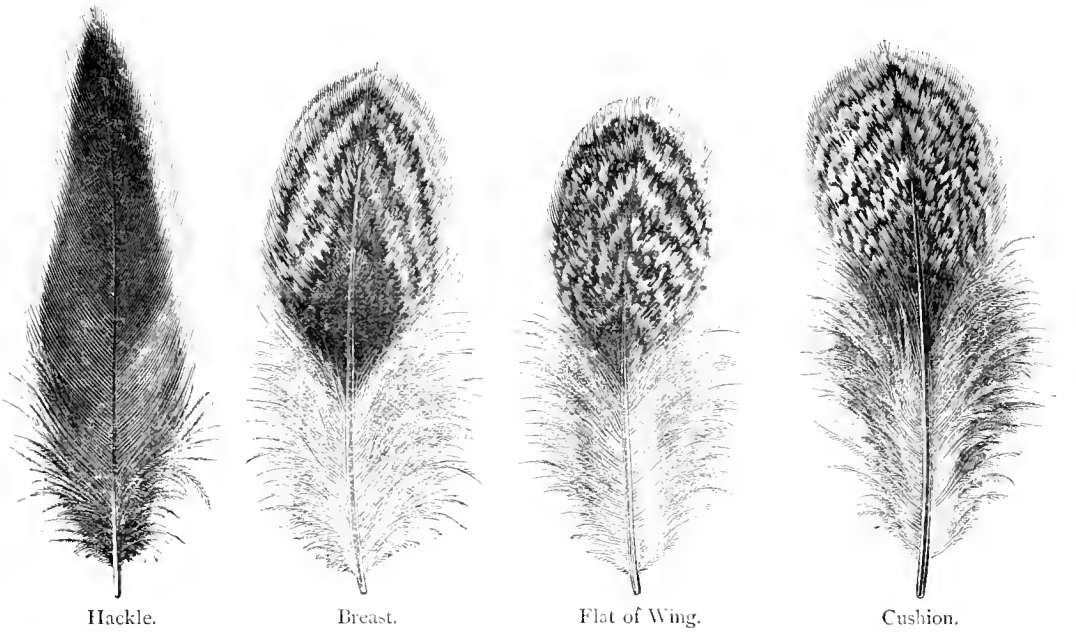


Fig. 65.

a sort of artificial appearance of gloss to the plumage, particularly on the cushion ; but it seems to us to destroy the uniform look which most fanciers seek, and we should prefer to have the feather coloured alike all over. There is no difficulty in breeding this white edge, if desired, as

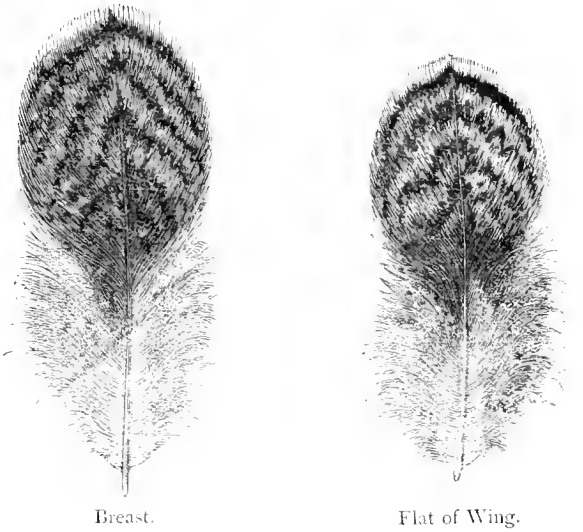


Fig. 66.

traces of it are every now and then occurring in almost every yard, from which it can be easily perpetuated.

The great point as regards colour and marking in Brahma pullets is, that whatever the colour be it should be *uniform over the body*, not patches of the clear grey in one place and brown

in another; and that the breast up to the throat be closely pencilled, so as to be nearly as dark as the sides or back. Whatever the colour be, the neck-hackle should be silvery white, heavily striped with rich black, and the shank-feathering be pencilled the same as the body.

The tail-feathers in the hen or pullet are black, the top pair only being edged with grey, or pencilled, on the upper edges. The shanks should be deep yellow, with or without a dusky shade.

In breeding Dark Brahmas, the constant tendency to breed lighter must be especially allowed for; and, therefore, to maintain the character of any strain it is ever necessary to provide depth of colour on one side or the other: in fact either the cock or the hens should, if possible, be a shade darker than the colour desired. The selection of hens or pullets will be comparatively a simple matter. The fancier should consider what colour and character of pencilling he prefers out of all those to be observed at shows, and then procure birds as near to it as possible. If they be, as above remarked, a shade darker than the fancied colour, it will be all the better, provided the *character* of the pencilling be the same. It is necessary, however, to distinguish between pullets and hens; in the case of silver-grey birds especially, which as hens often look so brown and dingy that it seems almost impossible to believe they were ever of that exquisite colour so admired by many in the young pullets. Such brown birds will often breed good stock; nevertheless, as the dingy colour is the great drawback and blemish of the silver-grey school, if hens can be obtained free from it so much the better. In any case the birds should be well pencilled over the breast, or it will be long and tedious work getting dark-breasted pullets from such a stock.

There is very often a little tendency in Dark Brahma pullets to show the shaft of the feather white about the shoulders and front of the breast, causing a slight appearance of streakiness, as in the Silver-grey Dorking. This tendency will increase if not watched, and when allowed to develop causes an unsightly appearance, being most conspicuous, by contrast, in the darkest coloured birds. Hens or pullets very much disfigured in this way should therefore be discarded; or, if employed for the sake of unusually fine shape or colour, must be most carefully mated with cocks quite free from streak: otherwise the produce will be nearly all thus marked, and the tendency may get so much developed that it may be almost impossible to breed it out again, the whole body showing the white streak down the centre of every feather in a most unsightly way. A little about the breast used to exist in nearly all pullets; but the care of breeders has lately succeeded in banishing it from all good yards, and no bird with a streaky breast would now win in a strong class.

Hens or pullets with very large coarse heads, of a "sour" expression, should in nearly every case be refused for breeding stock. Such a strain is very often crossed with the Dorking, and to get coarse heads is to lose one of the chief beauties of the Brahma breed. A hen with this defect has in most cases large coarse pencilling also, and only when the size, shape, and carriage were unusually fine, and pencilling also good, would we experiment with her, choosing for the purpose a particularly fine-headed male bird.

It is the choice of the cock that is the chief difficulty in breeding Dark Brahmas, for those differences in colour and marking which in the hens are so apparent are in him only partially perceptible even to the most experienced eye, and to most persons not at all. There is not a breeder who has never been disappointed in his expectations from some noble-looking bird; the different strains being so crossed and blended that unexpected tendencies are often developed, and baffle all calculation. Still, there are some general principles which make success at least likely to reward him who will observe them. In breeding silver-grey or blue-grey pullets, the cock

ought, if possible, to be entirely free from brown, even in the wing-bar. Purple reflections in the tail are also improper, the right colour being a very bright greenish black, while the bar on the wing should appear positively green. The more black there is towards the front part of the back the better, and the hackle and saddle-feathers ought to be solidly and *very distinctly* striped. Supposing the bird perfect in these respects, almost all will depend on the colour of the under parts; and Mr. F. Wragg, formerly manager of Mr. Boyle's yard, lays great stress* on the breast, thighs, and fluff being pure black, which seems at first sight reasonable enough. We are, however, satisfied from experience that it is to this rule, or more particularly to the principal stress being laid on the blackness of the *fluff*, that the white heads and pale breasts so frequently seen in silver-grey pullets are due. If a black-breasted cock can be procured, the fluff may be black with no ill result; but while black fluff is common, an *entirely* black breast is more rare: and if the bird have the *least* white mottling on that part, while the fluff is black, the effect will almost invariably be that the pullets bred from him are very dark behind, but too light on the breast and head. On the other hand, we have always found that a cock with the fluff slightly mottled produced better pencilled birds than the pure black, provided the *middle* of every feather were quite black, and all the white confined to the edges. Very often, indeed, the *shaft* of the feather shows white in the fluff of the cock, with more or less white or grey about the centre of the feather also; these birds will almost invariably† breed just such "streaky" pullets as described. But if the shafts and whole centre of the feathering be a rich black, with only a lacing of white at the tip and edges, no such result need be apprehended; and all that has to be stipulated for a probable good result is, that the breast, whether mottled or black, be darker, or at least fully as dark, as the thighs; the hackle well striped; and that his hens have good dark breasts. Two-thirds of the pullets bred will probably then be fit for exhibition, *provided his mates have the requisite breast-pencilling*. This last is after all the most important point, and without such mating the best cock in the world cannot be relied upon for pullet-breeding. A bird of first-class pullet-breeding blood may indeed breed various beautifully-marked birds, even from streaky-breasted hens; but these will be exceptions, not the rule, and such is not good or scientific breeding.

It is a singular fact, that by continually selecting cocks with wings perfectly clear from brown, a tendency was for a long time always developed to *increase* the brown, thus producing the very thing so carefully shunned. The brown so developed in the cockerels was however very different from that in darker strains, being of a dead or rusty tinge, and often stained or mingled with white. This fault also was, however, vanquished by the skill of the best breeders; and there are several well-known yards which now breed clear-winged cocks of very intense colour and unexceptionable breeding qualities.

* He speaks thus: "I wish to repeat that for breeding I select a cock with all the under parts perfectly black. I especially dislike to see the fluff on the cock's thighs with white in it. Many of the chickens from such a parent would be very bad in colour, showing light streaky feathers on the breast."—*Practical Poultry Keeper*, p. 111.

† We say *almost;* for a few years ago, at the best show of the year, we were asked by a well-known breeder to give our opinion of a cock, which had taken the second prize. The bird was fine in shape, size, and colour, all but an *unusual* amount of streaky feathers about the thighs. While, therefore, commending him as a show bird, we remarked that he would breed very bad pullets, and were much surprised to hear in reply, "Why, he breeds pullets to perfection!" Some of his progeny at the same show were pointed out to us; and though neither the judges nor ourselves admired them much, they were free from streak, and we "owned up" that we did not know quite all about breeding Brahmas yet. Since then we have had a very streaky bird of our own breeding which bred some of the best pullets we ever saw. In this case, however, it is worthy of remark that the hens put with him were first-class, such as we had refused £20 per pair for, and the bird himself was descended from very solidly pencilled hens.

In breeding for the dense, very dark pencillings, a cock should be selected with the stripes at base of the hackle a particularly dense black, and the saddle also well striped, as in the feathers shown at Fig. 67, which are plucked from a bird of our own that hardly ever bred a bad chicken. Particular attention should be given to the shafts of the feathers, both in hackle and saddle, and if they be very white the bird should be rejected. Indeed, this precaution is necessary in breeding for any colour; but most of all in this, because the dark colour of the pullets will make any streakiness more conspicuous. We do not think we ever saw a cock quite free from white streak somewhere in the shafts of the saddle or hackle, but there should not be much, or we have generally found the bird bred streaky chickens. As the saddle merges into the tail-coverts, the black stripes ought to become very broad, and beautifully sharp at the edges, with glossy reflections; such a bird will rarely disappoint. The fluff is best of the same brilliant black in the centre of the feathers, with a slight lacing of white; and the breast may be either black or very slightly mottled. The best colour for pullet-breeding, according to our experience, is small round white spots about the size of pepper-corns, evenly distributed over glossy black; but a black

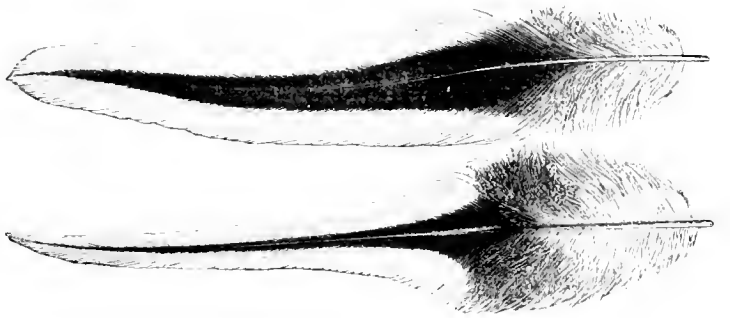


Fig. 67.

breast, with the fluff described above, will also breed good pullets, and for producing cockerels is much to be preferred. Particular attention should also be given to the front part of the back, where it is covered by the hackle. If there be plenty of black, *dark* pullets may be confidently anticipated, the other points mentioned above being correct; but they will often be *too* dark, merging into almost solid black on the back, with dark blotches about the breast; though this is not always the case, especially if the hens be of a lighter strain, when such dark cocks are the best. But if the hens also are dark, a cock should, if possible, be selected in which these black feathers of the back are *laced with white* on the edges; and he will in most cases, fluff and saddle being right, breed beautifully-pencilled birds. The wing may or may not have a very small amount of colour in it, but not so much brown, as a metallic, glossy, copper *bronze*. This should be situated towards the top of the wing-bar, and at the ends of the secondaries or quills of the wing, but not in so great a degree as to be very readily seen. The reflections of the tail and wing should be either green of a *bluish* cast, or of a purplish shade; we have found both breed beautiful pullets, but there is always some difference between the tails of the dark cocks and of the preceding strains. The breast of the cock *should in all cases be as dark, or rather darker, than the fluff;* and for breeding cockerels, perfectly black-breasted birds should, if possible, be chosen, that colour being much more valued in a show-pen. For breeding pullets, however, we repeat that all our experience (and it has been great) teaches that *a slightly mottled breast is best*, provided it be darker than the fluff, and the black be intense enough.

The brown colour liked by some breeders is less bred now than formerly. Those who admire it should select a cock with a *few* brown feathers in the bar of the wing. The breast may be considerably mottled, and so may the thighs, if the hens be darkly pencilled on the breast, but the white mottling must be very sharp and distinct. The stripes in the hackle are generally rather narrow in this coloured strain; and the tail may either show green reflections as in that first described, but darker, or a purple shade. It is also most important to ascertain that the bird be of a stock breeding the desired colour; indeed, we should consider this the most important point of all. Many persons seem to consider that brown Brahmas must necessarily be crossed. We certainly have seen some such birds, whose coarse, cruel-looking heads, and other points, denoted a cross with the Dorking; but many others present all the characteristics of pure-bred Brahmas, and in a few years, simply by selection, this colour may be bred from the purest grey. It is, therefore, more a matter of fancy than anything else.

In selecting a cock from our own yard for breeding, we always look first to the wing, then to the saddle and the tail-coverts, then to the fluff and breast. In purchasing one from another, we should lay more stress upon the saddle and coverts, and pay most attention of all to the colour of the birds he was bred from. With regard to the crossing of different colours, a cock of the dark strain may be mated with hens of either the brown or the silver-grey, and will only darken the pencilling. A cock of the brown strains, mated with hens of the two others, may give pretty tolerable results, giving however brown patches, or stray red feathers, or salmon breasts, to many of the pullets from silver-grey hens. A cock from a light silver-grey yard will breed very few good pullets at all with hens of other colours, unless unusually dark, but will sometimes produce very beautiful and clean-coloured cockerels. A cock from a really good dark blue-grey strain will breed well with almost anything. And as the shades of difference are so fine, in claiming a cock at any show, the purchaser should *always* observe carefully the colour of the hens or pullets shown by the same exhibitor, and only complete the transaction if that nearly agrees either with his own, or at least with a permissible cross for the purpose desired.

Dark Brahmas have on several occasions been extensively crossed with both Cochins and Grey Dorkings. In the case of Cochins the Partridge variety has been usually employed, and the motive, we believe, has been either to obtain darker-breasted pullets, or to recover cushion and fluff when too much lost from ignorant breeding. The Cochin breast will be one sign of such impurity in the blood, while the expression of the face is often very different from that of pure-bred birds. But the best test is the occurrence of red feathers about the hocks or fluff of the cockerels, with yellow in the hackle; and if in addition the hens bred from the same stock have red about the shoulders, the evidence will be pretty conclusive. Red or brown about a pullet's breast is, however, no proof whatever of a Cochin cross, as the purest bred birds will occasionally show it.

The Dorking cross has been attempted for several objects. Some have tried the experiment with a view to gain earlier growth, the Dorking being a quickly-maturing fowl, while the Brahma grows late. Others have desired to improve the quality of the meat—a legitimate object enough if the parentage were avowed—whilst some have hoped to improve the pencilling on the breast, always the difficult point with Brahma breeders. Many exhibitors doubt the existence of this cross at all; and on one occasion, at the Birmingham Show, when we pointed out a prize pen as certainly containing Dorking blood, we were met with an amount of abuse which we do not wish to encounter again. But facts quite justified our assertion; for in April of the following year we had a letter from a friend who had purchased a nest of eggs from the exhibitor of that very pen, stating that one of the chicks had the well-known *five claws*. Of late the taint has

been less perceptible than formerly. White legs are one sign of the cross. We rarely even yet visit a show without seeing somewhere a white-legged pullet, though they are less common than they were; and we believe this fault to have been introduced entirely by the Dorking cross, except where lime is used in the yard. We have seen birds all but perfect in every other point, and would not condemn such, as a good yellow-legged cock might obviate the fault in her progeny, and the bird may have been reared on a lime bottom; but unless this is the case it shows that a taint *has* existed, though nearly bred out again. A great want of cushion is another sign of Dorking blood, but is not to be trusted to alone, as bad selection in breeding will produce the same fault. On the whole the best sign is a large, "sour," cruel-looking head, which is generally the last evidence to quit a strain once contaminated, being often present even after the white leg has disappeared. A Brahma pullet may have much too long or too large a head for beauty, and yet be pure, provided the *expression* be gentle and pleasing; but we would never trust to any strain which bred cruel-looking birds. Minor signs are, too ample tail in the cocks, or too large wings, or comb very high in the centre division and not at the sides, and also white in the tail; but all these points should be considered and compared in doubtful cases before a decision is pronounced. Even the white leg, as we have said, we have found can be produced in a pure strain by allowing the birds to run on lime for a whole season.

Our portraits represent the best birds we had ever seen up to the time they were taken. The cockerel won all the principal cups of his year, and presented every Brahma point in a high degree; being of a deep rich black in all the under parts, and heavily striped in the upper, with the top feathers of his tail beautifully edged with pure white. He was of the short-necked class, very wide in build, and is rendered to the life. The pullet was a beautifully clear blue-grey; and the shape and other characteristics are exactly copied, though it has been found impossible fully to represent the exquisite beauty of the markings.

In breeding Brahmas, the points of colour we have in their place described as proper must be secured; but other faults may be compensated, as in the case of Cochins. Heavy feather, for instance, will be best secured in the same way, by mating hocked cockerels with scantily-feathered hens; and size, by breeding from short and compact cocks with long-backed hens. Small combs must be selected with especial care if this beautiful point be at all valued by the breeder; being yet one of the rarest features in otherwise good birds—perhaps, indeed, rarest of all with the exception of the perfect "black-cock" tail.

The breeder who wishes to revive this latter feature must choose his stock with reference to it, especially the hens. Probably all that can be done the first year will be to select a cock with some slight tendency to divergence in the top pair of tail-feathers, who should be mated with a hen or hens whose top pair of tail-feathers lie nearly or quite flat—*i.e.*, flat *laterally*, or with their edges extending side to side, instead of from front to back; by which means the tendency will be increased till the true tail be developed. Since we first published an engraving of it, some fanciers have very politely questioned whether such a tail as Mr. Teebay describes ever did or could exist. To such scepticism fact is the best answer: we have succeeded in breeding it ourselves, in the third generation from the first selection of stock for that purpose; and the beautiful bird, to which was awarded both the Crystal Palace Cup and the special extra prize at Birmingham in 1872, answered exactly and fully to the description we have given at page 251. The revival of this type of tail is therefore entirely a matter for individual choice and perseverance.

Waste chickens can be picked out with tolerable ease at about ten to twelve weeks old, when the sexes are separated. The general "carriage" of the cockerels is in fact, in this breed, *more*

like the ultimate or mature form then, than at a later or intermediate stage, when the bird becomes raw and "gawky," and often so unutterably ugly that no one but a genuine Brahma fancier would retain any faith in him at all. We have often been interested to observe how, after this period of transition, the shape and very gait of the ten-weeks chick have been reproduced in the matured cock. But at four or five months old, Brahma cockerels, either Light or Dark, are—well, certainly *not* handsome! and it is a singular fact that the rawest and ugliest bird of the lot generally turns out the best in the end. He is *making frame* while the others are looking "pretty," and eventually, when his great body has filled out and "settled" a little, and his feathers—especially that tail which seemed as if it *never* would grow—are come at last, turns out a magnificent giant, perhaps "the best bird you ever bred." A young cock, therefore, should never be discarded for being leggy, which will, in nine cases out of ten, disappear with age.

Light Brahma chickens often show a considerable amount of black where not wanted, especially in the shape of spots on the backs of the pullets or fluff of the cockerels. As much of this will often moult out at from six to seven months old, they should not be discarded for this fault unless very prominent. Dark pullets with almost white breasts will also frequently develop beautiful pencilling as the feathers change, though we certainly prefer to see them with perfect pencilling from the very first. Cockerels of the Dark breed, again, need not be rejected merely for brown on the wing, which often moults out by the age of six months (though here again it is *better* if the bird be clear in colour from his first feathers); but very streaky dark pullets, or such as show great splashes of white or brown, may be safely condemned, as may cockerels with nearly white breasts, a few of which may occur in any strain. Birds whose combs appear large and misshapen at an early age are also rarely worth keeping.

The economic merits of Brahmas are very great. That we have a high opinion of the breed, and take a very special interest in it, has long been known, and it has often been said that we are unduly partial; but facts will strongly corroborate our view of its good qualities. Imported into England in 1852, it shared with Cochins the "mania" which then prevailed, and the comparative decline which followed. But while Cochins, so extravagantly lauded at first, are rarely heard of now except as fancy birds, with Brahmas the case is precisely opposite. It has taken time for the fowl to make itself known, but its steady growth in popular favour has been the most extraordinary poultry phenomenon of late years. Long before we had even thought of giving a special exposition to the breed, the entries in Brahma classes had been every year steadily increasing at all English shows, and the number of people who kept the breed likewise: since then both have more than doubled, until the class for Dark cockerels at Birmingham, in 1871, reached the enormous number of 105 entries, by far the largest poultry class ever exhibited It has been hinted that this increase is artificial in its character, and the result of special effort; but it will at once be seen that such cannot be the case. It is beyond the power of any individual to *force* a fowl into popularity; and the Dorking and the Game Fowl have also had special works devoted to them, but without any approach to similar results. A fowl must have real and great merits thus to make its own way into general popularity; and such the Brahma truly has; possessing as it does a handsome appearance, great size, very good quality of flesh, great fecundity, a strong constitution and remarkable power of adapting itself to the most varying circumstances.

The size we have already spoken of; and we will maintain our assertion that the quality of the meat is also good. We often see or hear it called coarse; and there are strains, carelessly bred, which deserve the title, while the best are not *so* good as the very best table breeds. But this is not fair comparison; to be a first-rate table breed, the breed must be *bred for the table*, as these breeds for years have, and as the Brahma never has been. But a young Brahma of a well-bred strain is at

least better eating than nine-tenths of the chickens that can be bought at any but the very first London poulterers'. We have heard this testimony again and again borne to birds we have sent for some friend's table; and we venture to assert that a well-fed cockerel, of eight or ten pounds' weight, at six months old, dressed and served precisely as a turkey, will be found little inferior, either in appearance or eating, to the nobler bird. The legs are particularly juicy and tender, which is a great gain in such substantial parts; and, regarding it as a table fowl, any one who finds fault with a Brahma under the age of twelve months must be *very* particular indeed. As an *old* fowl, undoubtedly, it cannot be compared with the Dorking, and should be either boiled, curried, or stewed.

The constitution of the chicks, when bred from mature birds, is excellent. Many exhibition specimens are bred from young stock on both sides, and such are rather liable to suffer from leg-weakness; they also feather slowly, and require therefore much care if hatched early in the year. The progeny of adult birds, however, cannot possibly be surpassed in hardihood, and may be reared with hardly a death in the yard.

The fecundity of the hens is very great. It is true the production of eggs is considerably interfered with by the propensity to sit; but, in spite of this, there are many which will produce over 150 eggs per annum, which is a very high average. The tendency to incubate differs greatly in individuals. We have had hens which wished to sit when they had laid about twenty eggs, while others will lay from fifty to a hundred; and we have known cases where a hen has laid through the whole year with hardly a stoppage. There is no doubt whatever, as we have hinted already in Chap. VIII., that egg-production has been actually *lessened* in Dark Brahmas by the keen competition of fanciers in breeding for "feather." Attention has been so exclusively directed to this point that others have been neglected and have suffered; besides which, exhibitors have actually sought to *postpone* the laying of their pullets as far as possible, in order to keep them in show condition. This, repeated for generations, has no doubt had a serious effect on egg-production; but what the breed is *capable* of is well shown by the following communication from Mr. John Evans, of Keynsham, near Bristol for the truth of which we can personally vouch:—

"My experience of Dark Brahmas commenced in the spring of 1870; and being desirous to ascertain the productiveness of this class of fowl, I kept an accurate account for twelve months, day by day, of the number of eggs laid by three pullets—not themselves exhibition birds, though descended from prize ancestors of Miss Watts's strain. During the period named, the total egg-production of these three birds amounted in the aggregate to 629: and although I regret that I did not keep a separate account for each one, I am morally certain, from attentive observations that were made, that two of these birds produced each a much larger number of eggs than the third, and I am sure I am substantially correct in assigning to the two so referred to a proportion of 500 eggs out of the total number laid; thus showing a contribution to the egg-basket of 250 eggs each during the twelve months, as well as hatching and rearing a brood of chickens each within the same time. Two pullets from one of these birds, hatched on the 7th of March, commenced to lay within a day of each other, on the 16th and 17th of the August following, at the ages of five months and nine days and five months and ten days respectively, and continued to lay without intermission until the 11th of the following November, when I sold them. In the spring of 1872 I obtained from a gentleman to whom I had sold a pullet a granddaughter of one of the hens first named, and she commenced to lay early, producing an egg per day for five days; ceased the succeeding three days, and then, with a faculty for egg-production at least equal to that possessed by her maternal ancestry, laid sixty eggs in sixty-two days. I then disposed of her to a gentleman who, on my meeting him some few weeks afterwards, told me that her laying continued to be of the same character.

One more example will suffice. From a sitting of eggs purchased from yourself in the spring of 1871 I have one hen, beautifully pencilled, which may be fairly termed an exhibition bird, and which has laid most abundantly. I much regret not having had the opportunity of keeping an accurate memorandum of her individual egg-supply, but I am satisfied it is equal to either of the instances named. No matter what the condition of the weather, wet or dry, cold or hot, there has been scarcely any intermission to her daily produce, not even during her moulting season just passed; indeed I have endeavoured, but without success, to prevent her laying so much. The feeding of my birds has been always of the most simple character, and I have never had recourse to stimulating food of any kind, such as is occasionally employed to induce laying.

"I have thus hastily sketched the result of my own observations; and am convinced that, by proper selection, a strain of Brahmas can be produced which will reflect credit upon their breeders in the show-pen, as well as exhibit a very profitable "balance sheet" in the large number of eggs they will yield. Add these advantages to their substantial appearance on the table, combined with their excellent flavour; and, to my mind, you have in the splendid Brahma, judiciously bred, a bird which for ornament and profitable service is surpassed by none and equalled by few."

When it is added to these good qualities that the Brahma seems to thrive and grow alike, with only moderate care, whether on ample grass-range or in the strictest confinement,* while it is as naturally tame and easily managed as the Cochin, though far more sprightly, its growing popularity will cease to excite wonder. Perhaps there is no fowl, indeed, which will suit so many varying requirements; but it is not, any more than others, perfect, or adapted for *all* circumstances, and there are many in which it should not be kept. It will not answer, purely bred, as a fowl for the best town markets, being, when young, far less apt to fatten than the Dorking, and the feathered legs being regarded with an absurd prejudice by most London poulterers (the yellow skin often charged against it we do not mention, as the best strains of Brahmas are pinky or nearly white). To some extent we are glad to learn this prejudice is wearing off, but it still exists, and is an objection to the Brahma as a market fowl. Again, it does not answer where eggs alone are desired. The propensity to sit may be checked, but except in very skilful hands most hens suffer if *altogether* denied the exercise of this instinct, and frequently perish in moulting afterwards. It is, therefore, only when each hen can be allowed a brood annually that the fowl shows to advantage; and as the cockerels are quite large enough to kill at three months old, this can be done in many more cases than might be supposed.

It must also be said that the cocks are *very* fond of crowing; and though the note is generally clear, not hoarse and guttural as in the Cochin, it is so powerful as to be often a serious objection against keeping the fowl in town, not being always agreeable to non-enthusiastic neighbours.

In keeping the Brahma for profit, the treatment must be considered accordingly. From the accuracy of feather demanded in the Dark breed, and which we have already remarked to have in some degree perceptibly deteriorated that variety in other than show points, it will generally be

* As this goes to press, we have a note from Mr. Hewitt so fully bearing out our own remarks on the merits of this fowl that we insert it with pleasure. "There is one thing about your pets, the Brahmas," he says, "worth naming, which is a well-proved fact and quite in their favour, viz., that Brahmas on *really* damp ground are infinitely more hardy than Cochins. I have known many friends who tried to rear Cochins on constantly damp soil, the result being enlarged hocks and rickety chickens. On the same runs and with exactly the same care and diet, Brahmas realised every expectation; and a gentleman hitherto very disconsolate about his Cochins jocosely wrote me: 'Thanks for your advice. With the Cochin chickens at our place I always wanted the doctor; but as for these young Brahmas, they are never sick nor sorry, and I think you could hardly kill them with a pick-axe. We have reared over forty without a death or malformation.' I opine these hardy traits of character speak strongly as to their utility."

found, at present, that the Light variety is most valuable, both as a table bird and as a layer; and if the Dark be chosen, the stock should be carefully bred and chosen by the *owner himself*, with reference to the neglected points, by which means a vast improvement may be rapidly effected. The chickens must be fed well, but the appetites of the adult birds should never be satisfied. If their food—all being bought—costs more than three-halfpence per week each, with barley at five shillings per bushel, they have too much; and over-feeding is especially prejudicial to profit in this breed of fowls. The pullets should be *instantly* checked the first time or two they desire to incubate (unless sitters are actually wanted), when they will generally lay again in less than a fortnight; and by doing this, and setting, as already advised, the eggs from those which show the propensity least, it can be so modified as not to be troublesome, and a very valuable strain of fowls secured.

The Brahma is very valuable as a cross. With the Dorking cock it produces a splendid market fowl, with generally white legs, and the largest that can perhaps be produced. We have seen this cross condemned again and again by unpractical writers; but we abide by it, and have numerous letters speaking to its great value. One gentleman writes us just as these pages go to press that his Brahma-Dorkings "are the admiration of the whole county," and that many neighbouring farmers are going to follow his example; and others send similar accounts of the result. The cross between a Brahma cock and Dorking hen is not, however, nearly so good, either in size, hardiness, fecundity, or quality of meat. With the Crève cock the Brahma hen produces a fowl not so large as the Dorking cross, but of whiter and still more juicy quality of meat. The La Flèche cock produces very similar results. The Houdan cock produces a smaller fowl than either, but of very early maturity, capital quality of meat, and a most excellent layer. And, finally, the cross with a Spanish or Minorca cock and *Dark* Brahma hens produces a fowl, generally almost or quite black excepting gold margins to the hackles, which as a layer can hardly be surpassed, of a tall, commanding appearance, and very good eating, with only a moderate propensity to crow. This last cross is one of the most satisfactory fowls possible to keep for eggs and a few chickens, in the smoke of a town; the eggs being far superior to the pure Spanish in flavour, besides being yielded, as a rule, in greater numbers, and at seasons when the Spanish will hardly lay at all.

There are two affections to which Brahmas are rather more subject than other breeds. The first is a tendency of the two outer toes to be webbed together, which we believe to have been derived from the strain of a leading exhibitor some years back, having never noticed it before, or in any yard since which had not employed a cross from the one in question. Most cases of this deformity admit of cure if the membrane between the toes be divided at about three weeks old, an operation which causes only momentary pain; but if left, one or other toe is generally hopelessly deformed. The other is a tumour at the point of the breast-bone, which, in our opinion, is generally caused by the Brahma's prominent breast being brought in contact with the hard perch. It is not very common, but almost every breeder who roosts his chickens will have one or two cases annually. It commences as a small sac filled with watery fluid; but sometimes the tumour is of a cheesy consistence, or one form may pass into the other. Any cheesy matter should be extracted; but all that is needed for the watery form is the simple treatment advised by Mr. Joseph Hinton, of drawing two coarse woollen threads, as setons, through the sac, and retaining them for a fortnight, moving a little daily. The bird should be prevented perching meanwhile.

We have occasionally seen deformed bills in Brahmas. Mr. Hinton states that he has noticed them as a consequence of in-breeding in Brahmas, Polish, and Malays. In the case of Brahmas, however, we have known it occur where two quite distinct strains have been crossed; and it is hence another very strong proof of the whole race being descended, as Mr. Cornish affirms, from one pair of birds.

JUDGING BRAHMAS.—The chief danger of an inexperienced judge in deciding the merits of Brahmas is that of confounding the Brahma type with the Cochin, from which it is quite distinct in various respects. The breed is better understood now than formerly; but some few years ago there were in England only three or four judges who really seemed to understand what a Brahma was or ought to be, and even now we sometimes see mistakes evidently founded upon a confusion between the two Asiatic races. But for the services of Messrs. Hewitt and Teebay in particular, who could remember the true-bred fowl as it used to be, the injury done in this way would have been beyond remedy, and it may be well to point out the principal differences which truly characterise the two races. While the tail of the Cochin is as small, low, and soft as possible, that of the Brahma should be nearly upright, of a tolerable size, containing a small amount of quill, and with the top feathers spreading out as before described. The Cochin plumage is of a loose or downy character, while the Brahma should be a hard-feathered breed, the plumage both in cocks and hens lying close and compact; hence the Brahma, while well furnished, has less fluff than the Cochin, and while square, is not "lumpy" in make. The Cochin should appear quiet and solid; the Brahma sprightly and active. While the cushion of a Cochin hen is almost globular in form, that of a perfect Brahma hen or pullet should rise more and more, until it merges harmoniously into the nearly upright tail. And, finally, the breast of a good Brahma is deep and full, with the crop low down, thus contrasting directly with the shape of the Cochin, in which breast is greatly wanting.

Minor differences scarcely need pointing out, with the exception, perhaps, of the peculiar Brahma *head*, which will always have some attention from a good judge, differing as it does in expression from that of any other fowl. In all but colour it exactly resembles, when perfect, that of a grouse, being short and wide, with a peculiar "knowing" look caused by a slight fulness or breadth over the eyes. This is sometimes so exaggerated as to look coarse and rather sour—such is to be regarded as a decided fault—but, on the other hand, a bird in which this peculiar character is not at all seen is not a good Brahma. The peculiar type of head is best seen in the pullets, and is exactly rendered in the plate of the Dark pullet appended to this chapter; but a first-class cockerel should also show it plainly.

Mr. Tegetmeier's numerical scale of points for Brahmas is precisely the same as for Cochins, but that of the American "Standard" in this case differs considerably, as follows:—

AMERICAN SCALE OF "POINTS IN BRAHMAS."

Size	15
Head and Wattles	5
Comb	10
Wings—primaries well tucked under secondaries	10
Legs, Colour and Feathering of	5
Fluff	5
Tail, Form and Carriage of	5
Colour	20
Symmetry	15
Condition	10
	100

In every case of difference, the advantage as regards accuracy is unquestionably on the side of the American scale, which is founded upon our own, published in a monograph upon this breed in 1870. We had not at that time learnt from our American friends the advantages of a higher ideal

number, and accordingly based our scales on unity; but separating the sexes, and carrying out the principle of valuing defects—which we had found, as already observed, absolutely essential to any accurate system—to a very considerable extent, as follows:—

SCALE OF POINTS FOR THE COCK.

Points of Merit.	
Size	4
Colour	4
Smallness, Shape, and Expression of Head	1
Comb	2
Fulness of Hackle	1
Wings, Proper Size and Position of	1
Legs and Feathering	2
Fluff	1
Breadth of Saddle	1
Rise of ditto	1
Tail	2
Symmetry	2
Condition and Handsome Appearance	3
	25

Special Defects. To Count Against the Bird in Proportion to their Degree.	
Stain of White in Deaf ear	1
White Legs *	3
Primaries of Wing not tucked in	3
Vulture-hocks	3 to 4
White in the Tail	3

* A white or pinky-legged bird to be disqualified, unless very perfect in other respects.

SCALE OF POINTS FOR THE HEN.

Points of Merit.	
Size	3
Beauty and Regularity of Colour and Marking	4
Smallness and Beauty of Head	2
Comb	1
Shortness and Breadth of Back	1
Cushion	2
Fluff	1
Legs and Feathering	2
Shape	2
Condition, Carriage, and General Appearance	2
	20

Special Defects.	
White Legs	2
Very Long Tail	2
Primaries not Tucked in	3
Very Streaky Feathers, though otherwise good colour (in Dark)	2
Shank Feathering not pencilled as body (in Dark)	1
Spotted Back (in Light)	2
Vulture-hocks	2 to 3

Raising these scales by multiplication to a total of 100 points, it will be seen that our scale for the hen, modified as regards head and comb by that given for the cock, has been in all its main features almost exactly copied by the convention which drew up the American scale; and the "points" in this breed having been "passed" after a more thorough debate and searching criticism than was bestowed upon any other is a gratifying testimony to the general accuracy of the conclusions we had drawn from laborious analysis of English judging, which we may perhaps be excused for not passing unnoticed. The slight differences observable, such as absence of any points for cushion, are owing to the preference of American fanciers for large and long rather than compact frames; and with keener competition the very sense of beauty alone will, we believe, bring about a closer approximation to English ideas on this subject.

We still think that as regards head and comb, at least, the sexes require special provision in the case of Brahmas, on account chiefly of the highly typical comb being so much more conspicuous in the cock, whilst the head itself, on the contrary, is of more importance in the hen. The great importance of pencilling on the breasts of the pullets or hens must also be kept in view. By valuing

defects solely, however, it becomes easy to provide for all these matters in one scale; otherwise, and in all essential proportions, the figures now given will be found closely to agree with those we framed two years ago, further experience having, as we have seen, only confirmed their accuracy.

SCHEDULE FOR JUDGING BRAHMAS.

GENERAL CHARACTERISTICS OF COCK.—*Head and Neck*—General appearance of head very short, small, and intelligent; beak short, curved, and stout at the base; comb triple or in three ridges, resembling three small combs, the centre being the highest, and the whole small, low, and firm on the head, the centre ridge *perfectly* straight and neatly serrated; wattles moderately long, thin, and pendant; deaf-ears large, and hanging below the wattles; neck well-proportioned and finely curved, as in a spirited horse, and very thickly furnished with long hackle, which should flow well over back and shoulders. *Body*—General shape large and deep, but tight and compact in make; back broad and short; saddle very broad and large, with a gradual and decided rise to the tail, so as to form no angle with that member; wings larger than in Cochins, but still small and neatly tucked up, with secondaries carried well under the primaries; breast full, prominent, and reaching well down. *Legs and Feet*—Thighs large and well-furnished with fluffy feathers, the hocks being entirely covered with soft curling feathers, but free from stiff quills (vulture-hock) which are particularly objectionable; shanks rather but not too short, thick, wide apart, and heavily feathered down the outside, the feathering to start out well from the hock, and continue to ends of outer and middle toes; toes large, straight, and well spread out. *Tail*—Much larger than in Cochins, but still small, carried nearly but not quite upright, and the top pair of feathers curving outwards as in the tail of the black-cock; sickles very short, and not curving much downwards, but lesser sickles and tail-coverts very abundant, covering nearly the whole sides of the tail. *Size*—Very large, ranging from eleven pounds to fifteen pounds in cocks, and eight pounds to eleven pounds in cockerels. *General Appearance*—Very symmetrical and compact. *Carriage*—Noble and commanding, with the head carried very high.

GENERAL CHARACTERISTICS OF HEN.—*Head and Neck*—General appearance of head, very small, peculiarly arch, and intelligent, caused by a slight fulness over the eye, which should on no account tend to coarseness; beak and head rather short, as in the cock; comb as small as possible, a large loose comb being particularly objectionable; deaf-ears well developed; wattles nicely rounded, neat, and free from any folds; neck short, very full in hackle, and free from twist in the hackle. *Body*—General shape square and neat; back wide, flat across, and short; cushion broad and large, not convex or globular as in Cochins, but rising to the tail; wings moderate in size, and well tucked into the fluff and cushion-feathering; breast very prominent, low down, and full. *Legs and Feet*—As in the cock, but as short as possible. *Tail*—Rather short, so as not to rise much above the extremity of the cushion, and carried nearly upright. *Size*—Very large, ranging from eight pounds to thirteen pounds in hens, and six pounds to nine pounds in pullets. *General Appearance*—Massive and square, but neat and compact. *Carriage*—Matronly and dignified, both head and tail being well carried up.

COLOUR OF LIGHT BRAHMAS.—*In both Sexes*—Beak a rich yellow, with or without a dark stripe. Comb, face, deaf-ears, and wattles brilliant red, with as few spiky feathers as possible. Eyes pearl or red, red being preferable. Shanks a brilliant orange-yellow. *Colour of Cock*—Head silvery white; hackle white, striped with black as distinctly as possible; saddle-feathers either white or white lightly striped with black; tail and tail-coverts glossy green-black, except the two top feathers, which may or may not be laced with white. Rest of the body a pearly surface-colour, with grey under-fluff seen when plumage is ruffled; the secondaries being white on lower edges and black on the inner, and primaries black. The shank-feathering white more or less mottled with black. *Colour of Hen*—Head silvery white; hackle white, heavily striped with bright intense black; tail black, except the top pair, which should be edged with white. Rest of the plumage white on the surface and grey in the under fluff, with wings and leg-feathers as in the cock. [American fanciers admit a creamy tinge to the white; but perfect birds should be of a pure and pearly colour all over.]

COLOUR OF DARK BRAHMAS—*In both Sexes.*—Beak yellow, yellow with a dark stripe, horn-colour, or black. Eyes pearl or red, the latter preferable. Comb, face, deaf-ears, and wattles brilliant red, as little obscured by feathers as possible, the beard, or feathers under throat, not to exceed moderation. *Colour of Cock*—Head silvery white; hackle white, heavily and sharply striped with rich black, as free from white streak in centre as possible. Saddle-feathers the same. Back and shoulders silvery white, except between the shoulders, where the feathers should be black laced with white. Upper wing-butts black; bow silvery white; bar, or coverts, glossy black "shot" with green; secondaries white on outside web, which is all that appears when wing is closed; black on inside; the end of every feather black. Primaries black except a narrow white edge on outside web. Breast, under parts, and leg-feather glossy black, as intense as possible, or black evenly and sharply mottled with small spots of white. Fluff black, or black laced or tipped with white. [All black in the under parts preferable for exhibition.] Tail black, richly "shot" or glossed with colour—white not a disqualification, but very objectionable. Shanks a deep orange-yellow. *Colour of Hen*—Head and hackle silvery white, heavily and sharply striped with black, the marking to extend well over the head. Tail black, the top pair edged with grey. Rest of the plumage a silver-grey, dull grey, or steel-grey ground-colour, accurately pencilled over in a crescentic form with steel grey, blackish grey, or black; the breast to be perfectly marked, and free from streaks up to the throat; a chestnut tinge not objectionable if of a rich and not dingy character. The leg-feather to be pencilled as the body. Shanks deep yellow, with or without a dusky tinge.

VALUE OF DEFECTS* IN JUDGING.

Standard of Perfection.	
A bird ideally perfect in shape, size, colour, head and comb, cushion or saddle, leg-feathers, tail, &c., and in perfect health and condition, to count in points	100
If of extraordinary size, add on that account [a]	5

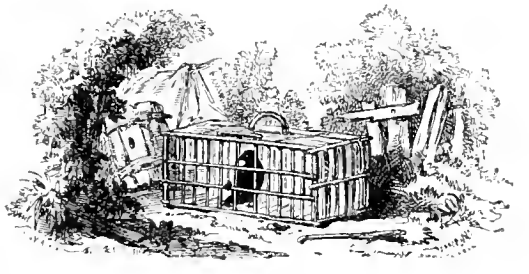
Defects to be Deducted.	
Bad head and comb (comb to count 7 in cocks, and 5 in hens)	12
Scanty hackle	5
Want of cushion	7
,, ,, fluff	6
,, ,, leg-feather	7
Vulture-hocks	20
Bad shape or carriage of tail	6
White in tail	10
Primaries out of order [b]	15
Pale legs	8
Curved toes	7
Stain of white in deaf-ear	5
Splashed or streaky breasts in Dark, or black specks in Light	12
Shank-feather (in Dark hens) not pencilled as the body	4
Other faults of colour	10
Want of size	20
,, ,, general symmetry	15
,, ,, condition	12
,, ,, ,, (if total)	35

[a] See note to Cochins, p. 238.

[b] This refers to primaries merely "slipped" outside the wing. For primaries actually twisted on their axes, see list of disqualifications below.

DISQUALIFICATIONS.—Birds not tolerably matched. Primary feathers twisted on their axes. Utter absence of leg-feather. Pinky legs. Large red or white splashes in Dark birds, or conspicuous black spots in Light. Round or crooked backs, wry-tails, crooked bills, knock-knees, or any other bodily deformity. Any fraudulent dyeing, dressing, or trimming.

* Since our scale for Cochins went to press, we have had opportunities at the Crystal Palace and again at Birmingham of testing those for several breeds by the keen competition at these immense gatherings, and were somewhat surprised to find, not so much their superior accuracy—which we were assured of beforehand—but the immeasurably greater quickness and ease of their application, which we had scarcely been prepared for. The reason appeared to be that the actual defects of a bird being usually comparatively few and well marked, and attention being by this system confined to them, the result is arrived at almost instantaneously; whereas when perfections have to be valued, *every* individual point must be estimated in detail. In practice we found it best and simplest to merely estimate and add up the value of defects, when the birds which gave the lowest numbers were of course superior. Accuracy will manifestly depend on the correctness with which the *degree* of defect is valued, as compared with the total points allowed for it in the scale.



CHAPTER XX.

MALAYS.

A BIRD similar to the Malay in all essential characteristics is still the indigenous or common fowl of India, as well as the smaller peninsula whose name it bears, and so far its origin is not difficult to determine; further back the problem is not so easy. Temminck, as is well known, considered the fowl to be the domesticated descendant of a wild *Gallus giganteus;* but it is the fashion now to sneer at this old naturalist, and to acknowledge no remote ancestor save *Gallus Bankiva* as the origin of all our poultry. It may perhaps be so, though we may be permitted to observe that little in the shape of real argument has yet been adduced for this view, and that the Malay type of bird is, if anything, far more diffused than the other throughout Eastern Asia. To say that a bird thus widely spread is only a *domesticated* breed, does not count for much with any practical breeder of fowls, who knows how surely and definitely *reversion* tells its tale on an artificial race, unless guarded against by a sedulous care which the Easterns never give; and it is marvellous to us that Mr. Darwin, who so dwells on this tendency so far as it serves his own argument, does not appear even to see its force wherever it bears against him. It is, however, no part of our purpose to enter into a disquisition on a subject which, in our opinion, requires many more facts to be ascertained before it can be satisfactorily dealt with; and with the simple remark that the Malay is, at all events, one of the most ancient and well-marked of all domesticated breeds, we therefore proceed at once to describe the breed itself as now known to fanciers.

The Malay characteristics are very distinct and peculiar, consisting more in general points than any fixed standard of colour. The head of the cock is very broad and long, with heavy overhanging eyebrows, which give a most cruel expression to the face. The beak is stout at the base, and much more curved or hooked than in any other variety of poultry, still further adding to the fierceness of expression. The face is unusually bare of feathers, giving a red and skinny appearance to the whole, even the throat being left nearly exposed in most specimens. Wattles and deaf-ears are small, but the comb is very peculiar—in fact it is peculiar to this breed, being neither single, rose, or triple, but more resembling the half of a very small walnut—a mere roundish convex lump, covered with very small projections. It should be small, even, and set well forward towards the beak. The neck is very long, and hackle short, hard, and scanty, making it appear longer still, the head being carried as high as possible. The general shape of the body is large at the shoulders, and tapering away to the tail, the shoulders being carried so high that the back slants downwards, and the tail also droops towards the ground. The thighs and legs are very long, and the wings strong and bony, the shoulders standing prominently and sharply out from the body, even when they are closed. All the plumage is very short, hard, and of extraordinary lustre.

The hen resembles the cock in general characters, but in carriage does not droop so much behind, her tail being usually carried a very little above the horizontal position.

In colour there are Whites, Blacks, and Piles; but the generally shown type of late is either black, or resembling in colour Black-red Game cocks, with darkish Wheaten hens. The earlier

importations varied a great deal, and partook rather more of a lightish brown-red character, the breasts of many of the cocks being brown or red; but among the dark colours a pure black breast is now necessary to win at any good show.

Many years ago, when Cochins were unknown, Malays were the only Asiatic breeds which could be used to give size by crossing to smaller fowls; and being then freely imported, were large heavy birds. But of late the superiority of the Cochin in temper has so diminished Malay admirers, that there has been little demand for imported birds; in-and-in breeding has been the necessary consequence; and they now usually appear in the pens as actually *small* fowls, though their real weight is always greater than appears. The cocks used to stand thirty inches high, and weigh eleven to twelve pounds, the hens in proportion; but now at the very least one-third must be taken off these figures. We believe, however, that much might be done to restore the old proportions by the judicious use of bone-dust and "Parrish's Chemical Food."

The following notes on Malays have been furnished us by the Rev. A. G. Brooke, so well known as an old (and still successful) admirer and breeder of this variety:—

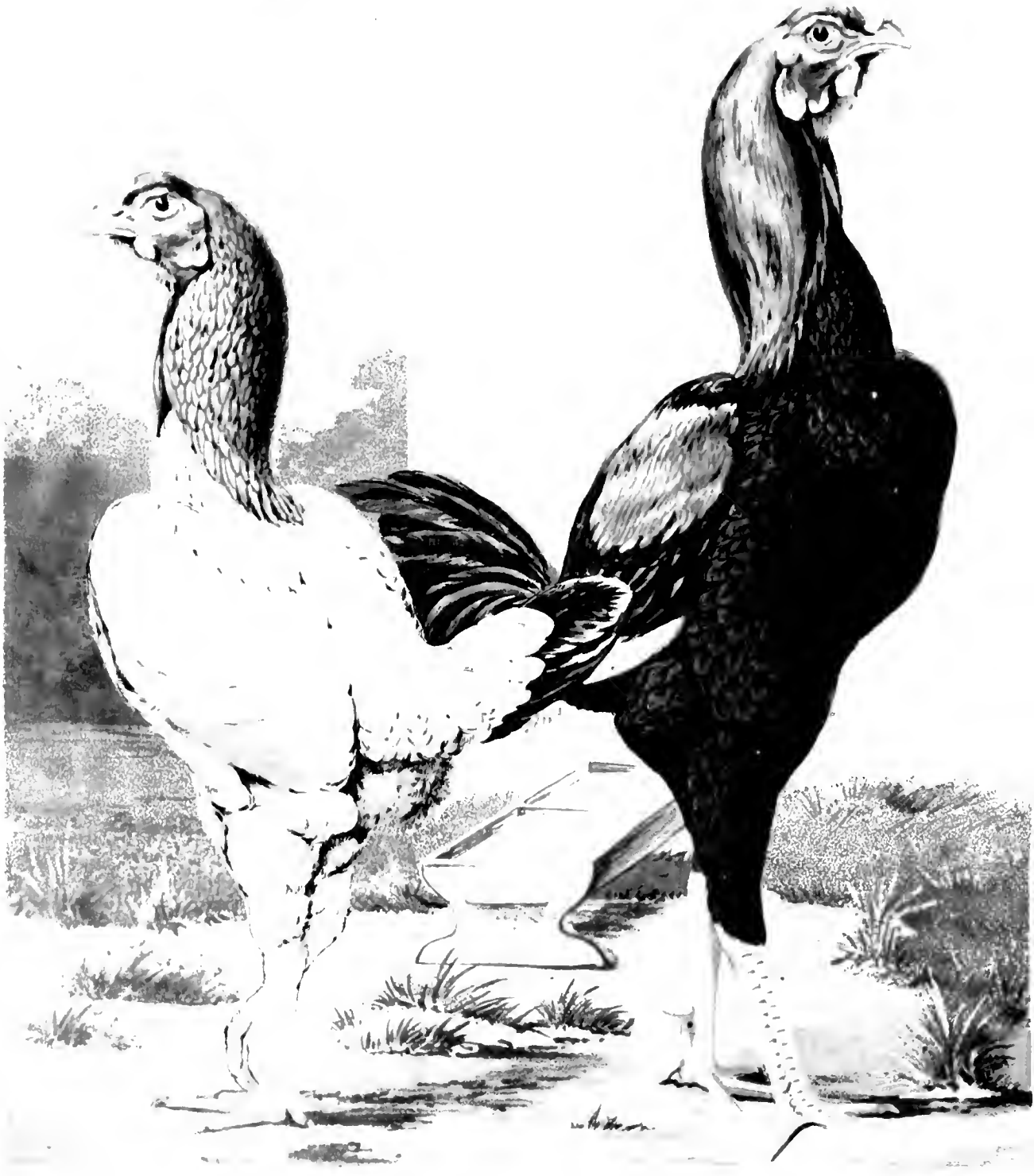
"To say that Malays are favourites with the majority of poultry fanciers would be untrue, for hardly ever do I attend a show where the committee are kind enough to give them a separate class, but I hear from one, 'What horrid ugly-looking things!' from another, 'What is the use of those long-legged creatures?' or, as I once heard an elderly gentleman observe, 'I have no sympathy with Malays.' They have been for some time past looked upon as a persecuted race; for this and no other reason did I, fifteen years ago, purchase some in the neighbourhood of the London Docks, and to the present time have most pertinaciously adhered to them. It is true that I have met with many discouragements; every one that comes to look at my poultry seems to make a point of abusing them, though they are candid enough to admit that the plumage of the cocks is magnificent.

"It is far more difficult now to obtain Malays from abroad than formerly; and even then I have seen many imported birds with white feathers in their tails and wings. Experience has taught me to discard such, and never breed from them, as the white feathers mostly appear in their offspring. Oftentimes, too, brown patches appear on the breasts of imported cocks, which I look upon as a great disqualification; the breast should be pure black.

"I am bound to admit that, for want of a thorough good cross, Malays are sadly deteriorating in size. I have heard of cocks weighing eleven pounds, and hens nine pounds; but seldom have any of my own cocks weighing more than eight, or hens more than six. So fatal do I consider the breeding in-and-in, that some years I have set no eggs at all, because I could get no cross sufficiently good; but was fortunate enough to be in possession of a foreign hen for last breeding season.

"If I may so use the expression, Malays are getting too 'Anglicised;' they are too genteel. Their necks are far shorter than they used to be, their shoulders not so high, their combs are much larger, they have too much neck-hackle: the cocks' tails are mostly too full, and not drooping enough; the hens are often fan-tailed. These are innovations which have gradually crept in, and I trust that admirers of the breed will spare no pains to try and stamp them out. About twelve years ago, I attended a poultry-show at Gloucester, and there had the privilege of seeing a grand pen of Malays belonging to a Mr. Leighton, of Cheltenham. I have never seen such since; they were giants, but well-nigh perfect.

"Size is a great point, undoubtedly, in Malays; but I have often pulled through at exhibitions with average-size birds, through style, condition, and tightness of plumage. At Birmingham, in 1864, I won first prize with a pen of chickens (cockerel and two pullets) hatched in June; and one



of the poultry journals, in its report of the Malay classes, observed that 'the gem of the collection was the first prize pen of chickens, with plumage as close and hard as though they were clad in burnished metal.'

"To ensure good plumage, Malays ought to be kept warm in cold weather. My houses are constructed of wood, and lined all round with matting during the winter months; in the spring the mats are removed, and the interior of the houses well cleaned and lime-washed. They have plenty of dry earth, often renewed, and straw laid on the floor just on that part where they alight from their perch, as they come to the ground with great force, and are apt, like Dorkings, to become bumble-footed if they perch too high. The perch should just allow of the birds walking under it without injuring their plumage, and should be very broad, and bound round with carpet. To each house is attached a wire run about ten feet long and six feet broad, into which about nine o'clock during the winter the birds are let out; the ground about three times a week being dug and raked over, and then mostly covered with straw, in which they have to scratch for their food. Each run has a small iron trough, standing on two bricks; the water is emptied out every night, and renewed in the morning. In the summer time they are not shut in their houses at night, but have free access to their runs. By frequently adding fresh earth the fowls get their sand-bath, which is most essential to their health and comfort.

"The food I mostly give them is small round Indian corn and boiled rice, mixed with barley-meal; occasionally bread sopped in ale, or potatoes mashed with gravy. Avoid meat and bones by all means: the meat is too heating, and, I believe, is conducive to feather-eating; the bones cause quarrelling. I grow hundreds of cabbages and lettuces every year for them, and in the summer they often besides have a grass sod, which they much enjoy. They bear confinement uncommonly well, and I seldom have any suffering from illness, or find them look droop
is in a great measure attributable to the very clean way in which they are kept.

"It is advisable not to keep more than a cock and two hens in each run, and as they are naturally of a savage and irritable disposition, if possible avoid letting them see their neighbours. My runs are so constructed in the shrubberies and other parts of the garden that they cannot possibly see or be seen by the other fowls. When they are allowed to be restless and excited they will never get into exhibition trim.

"The chickens as a rule are hardy, and will stand a great deal of cold provided there are no draughts; but it is best not to hatch them before May, as they have but few feathers for the first three months. I never recommended a Malay hen as a rearer of chickens; they sit very well, but are clumsy, and uncertain in temper with their progeny. The eggs they lay are very rich, but not so numerous as in many other breeds. The birds shown in the plate seem to be the favourite colour; there are also Brown-reds, White, and Black; there used to be Cuckoos, but these seem to be extinct.

"As a cross in the farm-yard the Malay cock is very useful, imparting both size and quality. Game-breeders occasionally use them to get increased size, but whenever application is made to me for a Malay cock for that purpose, I decline complying with the request. Surely such a cross does much harm, and invariably shows itself most prominently.

"Now that Malays are being more recognised as a distinct breed, and poultry-show committees seem more inclined to give them a class to themselves, I trust there will henceforth be a greater number exhibited, and strongly advise any one desirous of giving them a trial to be sure and keep them by themselves."

The following remarks are added by Mr. Joseph Hinton, of Warminster, also a faithful adherent of this much-abused race:—

"I quite agree with all that Mr. Brooke has said about the white feathers in tail and wing of the Black-breasted Reds; they are very objectionable, and are very likely to be transmitted to their offspring. As regards the combs, my only objection to their smallness is that the small-combed cocks are very likely to throw *pea-combed* chickens. This is certainly a very objectionable point, yet I have seen one of our best judges highly commend such birds. I have also known a *single-combed* hen awarded two prizes as a pullet. Both these faults in the comb are, or should be, disqualifications; both of them, I believe, come from narrow-combed birds.

"Malays are exceedingly pugnacious; their cruel expression is really an index of their disposition. The hens especially fight vigorously, and the addition of a new bird to a yard is the signal for a 'free fight' all round. They should never be exhibited in pairs; one is morally certain to be scalped.

"They sit well, but are dangerous mothers; I have known one call her chickens and deliberately pluck out their feathers. To place two coops near together is certain death to some of the chickens; they have no mercy on a stranger. Yet I had one instance this year in a Polish chick, a fortnight older than the rest of the brood, that I wanted to give to a fresh mother. The hen took to all except the Poland; yet, after being well-nigh scalped, by dint of perseverance, watching its opportunity and darting behind the mother to sleep, this chicken contrived to ingratiate itself into her affections, and at six weeks old was received on the footing of a daughter.

"Last year I saw some birds brought from India by a friend. These birds he called *Game*, but in many respects they more resembled Malays. The cock's comb and gills appeared to have been cut; the shoulders were very prominent, and of extraordinary breadth for the size of the bird; the weight probably under six pounds, but the size and hardness of thighs something marvellous. The thickness of the neck was also another marked point; the hackle was scanty, and the tail drooping; whilst the general carriage was very Malay. The hens were even more Malay in character than the cocks, and the combs appeared warty. Of these birds my friend was remarkably proud. No strain could stand against them in fighting in India, and he had been offered fabulous sums for them. The hardness of these birds was something quite out of the common, and he tells me the same bird has fought four days following. The method of fighting there is a test of pluck and endurance, for they cut off the spur and bind tape over it, so that the battle is lengthened out; yet, he says, these birds would fight day after day for the time I have stated. I cannot but think that this strain is a mixture of English Game and Malay."

The following additional notes by Mr. Hewitt are particularly valuable as contrasting the modern Malay with the breed as formerly known. His remarks on the hard and *narrow* feather of older days will be especially noticed.

"I much regret to see the universal falling off in size and general characteristics that has taken place in Malays during the last forty years. I think it may probably be fairly attributed to so very little encouragement being now given to this breed by the committees of poultry-shows, from the fact that the entries in this class rarely pay even a half of their expenses and prize-money. That few birds are more useful as a 'cross' to produce a first-rate table fowl, the experience of many other individuals as well as my own will fully attest; but I imagine their, at first sight, strangely gaunt appearance to unpractised eyes has prevented Malay fowls having as fair a claim on popularity as they really deserve. No breed can be more distinct from all others in gait, plumage, or habit; and I believe the *furore* for Cochins some years back tended much to the displacement of Malays in districts where they formerly were by no means unusual.

"Taking a retrospect of the Malays, as they existed before poultry-shows were so common, it appears that the strong elastic feather, so hard and metallic, yet so scanty, and the extreme length

of the thigh bone—so unsightly, yet so all-important characteristics—owners of late years have attempted to soften down, simply to ensure a better-looking and more compact fowl on the table. We thus have lost, in a great measure, the lovely, narrow, lustrous feather that once stamped this breed as standing far aloof from all others—a feature that in the Malays of the years 1830 to 1835 was almost universal, the breast-feathers of birds of about that date being so narrow and free from down as scarcely to cover the fowl's body; whilst the sickles and side-coverts of the cock's tail never exceeded a half-inch in width, were of the brightest iridescent hue, but slightly curved, and tapered very gradually indeed to an extremely fine point. Though carrying with them first impressions of being so barely supplied as to quantity of plumage, such birds when adult never appeared chilled, but, on the contrary, as though encased in whalebone-like armour from the effects of cold.

"Neither do we now see any close approach to the great weights customary in Malays of bygone days. In 1833 I possessed a flock of Red Pile Malays, bred from a pen of three birds purchased for me from on shipboard at Liverpool: the old cock was nearly eleven pounds weight, and the best hen a little over nine pounds. With the enthusiasm of youth, I weighed them scores of times, hoping to make this couple twenty-one pounds, which however, at their best, they never did attain by two or three ounces. I think we may look in vain for birds of that weight in the present hour. For the amusement of friends, I frequently tested this cock by putting a piece of bread on a table twenty-eight inches in height and four inches from the edge, and yet he was so lengthy and stilty as to easily appropriate the much-coveted morsel without jumping. These fowls bred well, and tolerably true to feather; but among many chickens, I obtained two white pullets and a black-red cockerel, though for three years they bred exclusively Red Piles, the three 'sports' just named all occuring in one nest. Some few years back a pen of the same variety of Malays were successfully exhibited at several shows, by a member of the Council of the Birmingham Poultry Exhibition, under the name of 'Rangoons;' they were identical with the breed I once had, and were much larger than our present Malays.

"The eggs of the Malays are exceedingly good in quality, and, being very thick-shelled, keep well.

"The cross with the Grey Dorking hen is an admirable table fowl, superabundantly supplied with flesh of very high flavour; and I may state I repeatedly killed cockerels of the year thus cross-bred that, purposely well fed up for Christmas, weighed eighteen pounds the couple, plucked but not drawn—the choice joints, viz., wings, breast, and merry-thought, being especially well developed. Before poultry-shows were prevalent Malays were chiefly kept on account of their really good useful quality on the dish, and their extreme singularity of appearance when living. The amateurs of the present time have mostly discarded them, as being not certain prize-winners; still my impression is they are fully as remunerative as many of the more fashionable breeds."

The number of Malay breeders in England could be counted on the fingers, and hence the evils of in-breeding—as already pointed out in the case of White Cochins—would in this case be intensified in a high degree, and must be avoided as far as possible. Every chance of procuring a good imported hen (cocks are usually too imperfect in colour to be of any use) should be secured; and every means of giving tone and strength to the system, such as those we have already hinted at, diligently adopted. The colour usually gives little trouble, as the black-breasted cocks and dark cinnamon or wheaten hens usually breed tolerably true, and white or black must be bred as usual in those colours. The practical management has been sufficiently treated of in the preceding notes.

In the East Indies Malays are often fought, and the great majority of fighting birds, in fact, contain more or less of Malay blood; though it will be seen from the next chapter that some birds much esteemed are of a different type altogether. Of late many fowls have been shown as Indian Game; and in Devonshire and Cornwall these latter birds have frequently special classes at the shows. At the Plymouth show in 1870 there was a remarkably fine and numerous "Indian Game" class, of which we took special note. Every bird contained a large element of Malay blood; but the tail was less drooping, the form more elegant, and the combs very small—indeed, we observed perfect pea-combs in no fewer than five cocks, or cockerels, though assured that all were bred perfectly pure. A few of these cocks were decidedly larger and heavier than the average Malay, and being so very near in general type, while of fresh blood, we have often wondered that Malay breeders do not strengthen their stocks from this source. Almost any Cornish show will furnish good specimens. Some of these birds we handled were fully as hard in body as any Game cock, and we were assured that they are often fought by Cornish cockers, and fight well; but the true-bred Malay has more ferocity than real courage, and a quick-fighting Game cock of good blood will make any Malay turn tail at once. They are, in every sense of the word, ferocious *bullies* rather than courageous birds, and this disposition it is which so thins the number of their admirers. They, however, possess some good qualities, and in some respects are valuable as crosses; and hence it is to be hoped they may be more encouraged than they have been, and not suffered to become extinct, as seemed really imminent at one time. A fine Malay is always striking in appearance, and will preserve his full beauty, owing to the hardness of feather, where any other fowl would become draggled and dirty. They will bear close confinement, and when full grown are hardy, though delicate as chickens, and particularly subject to leg-weakness.

As crosses, Malays are valuable for imparting large wings and breasts to varieties in which these points are wanting, and when thus used often breed very excellent and weighty birds; but when thus crossed with the Cochin it is a singular fact that the result is usually worse than the original. Crossed with the Spanish, the result is often (not always) a black fowl of most magnificent plumage and appearance, which one or two amateurs many years since appeared likely, by very careful breeding, to perpetuate and fix under the name of the Columbian Fowl; but the effort was not persevered with, and all traces of the attempt have become lost. This is to be regretted, as the variety was of great size, magnificently glossed plumage, very hardy, and a good layer of enormous and well-flavoured eggs. The lustre of the feathers far surpassed that of the Black Hamburgh, and no more splendid-looking bird was ever seen in a show-pen.

JUDGING MALAYS.—There are only a few judges who seem to understand the proper characteristics of Malays at all, and we have at different times seen the most flagrant errors on this account. Even at Birmingham, on one occasion, we observed the second prize given to a hen which, except that she was very "shiny," had hardly a single Malay point, being short-legged, flat-backed, with an upstanding and well-spread tail, and, to crown all, with a single comb! Such a bird would not have been even commended by a good judge of the breed; and the chief Malay points being very easily recognised, every one liable to be called upon to act as judge should have them clearly in his mind.

Fig. 68.

The long neck, great comparative height, high carriage of head, and high and prominent shoulders, can easily be remembered, and should always be looked for. The back will always droop towards the tail, and the hen should also "play" her tail well, as a

well-bred bird always will. In the cock, the outline of the hackle, back, and upper tail-feathers should resemble as nearly as possible the ideal line shown in Fig. 68, which is composed of three similar lines, combined at very nearly equal angles. Birds which meet this description, and are of average size, and in fair condition, will, at all events, be pretty good Malays, whatever shortcomings in colour they may have.

As regards colour, white and black are of course definite enough. Brassy-winged birds are also admissible, and in Piles of course some latitude must be allowed, as must be the case with the various "Reds" which are most usually shown. Regarding these latter, all that should be required is, that the colours are such as evidently show true and careful breeding, and are not the result of blind chance. For example, if a cock be evidently of the Black-red type, brown feathers in his breast are regarded as a great blemish; but if evidently a Brown-red bird, his general colour should harmonise with that school of colour. No other rule is practicable in a breed the admirers of which are so few; and the "Standard of Excellence" is erroneous, both on the score of too much narrowness in definition, and of a laxity which is never tolerated in judging, for while it gives on the one hand as the only proper "colour of Malays" (except white) cocks of the Black-red type with reddish brown or cinnamon hens, on the other hand it describes the cock's breast as "black, slightly mottled with reddish brown," a description of bird which would not have the slightest chance of winning at all in the presence of creditable specimens.

In giving a scale of points for Malays, we have had to depend far more upon our own individual judgment than in other breeds, the materials for actual analysis being entirely wanting at many shows, and competition being so very limited in all. The American "Standard of Excellence" does not even allude to the breed, which is indeed scarcely known in the United States; and the English work is so hopelessly in error as to be of little use even for comparison. It does not appear, in fact, to understand this breed at all; for, in addition to the mistakes already mentioned, it also states that the tail of the hen should be "carried upright," and that the eyes of both sexes must be "bright fiery red;" and this latter gross error has even been recently republished by the editor, in spite of our having clearly pointed it out* years ago. There *never was a Malay* with red eyes; they are invariably pearl, yellow, or daw. We have addressed a special query to the Rev. A. G. Brooke, whose experience is as great as any with this breed, and he writes, "In reply to yours, I have never yet seen a red eye in any variety of Malay;" and observation at any show where they are exhibited will confirm this remark. While, therefore, we can answer for our descriptions, it will be understood that the scale of points is, from sheer necessity in this case, very largely the result of our own individual judgment, based upon a careful consideration of the slender list of decisions we have been able to collate; a list narrowed still further by the necessary elimination of such erroneous awards as we have already alluded to.

SCHEDULE FOR JUDGING MALAYS.

GENERAL CHARACTERISTICS OF COCK.—*Head and Neck*—General appearance of head skinny, morose, and cruel; beak heavy, strong, and hooked; comb resembling a half strawberry or walnut, rather small, firm, and not falling over, placed well forward; wattles and deaf-ears scanty; face and throat bare of feathers; eyebrows heavy and projecting, adding to the sour expression. Neck long, very little curved, and carried very upright; the hackle very short and scanty. *Body*—General shape rather long and thin, large at shoulders, and tapering to the tail; back long, slanting, and rather convex in outline; saddle narrow and very drooping, the feathers short and scanty like the hackle; wings bony, very prominent at the shoulders, and rather long; breast hard, but very full, the breast-bone very deep and prominent. *Legs and Fat*—Thighs long, hard, and round; the feathers very short, leaving the hock perfectly exposed; shanks very long and bony, without a vestige of feather, and beautifully scaled;

* "Practical Poultry Keeper," p. 117.

toes long and straight, but not very thick, with very large and strong talons; back toe to lie flat and well to the ground. *Tail*—Moderate in length, carried close and rather drooping; the sickles sound and glossy, and not much curved. *Size*—Should be large, but at present is barely moderate, ranging from seven to nine pounds in cocks. *General Appearance.*—Long, thin, tall, and gaunt, but with extraordinary hardness and gloss of plumage. *Carriage*—Very high and upstanding in front, drooping behind.

GENERAL CHARACTERISTICS OF HEN.—In all respects similar to those of the cock, except that the tail is not carried quite so low, but slightly above the horizontal line, and well "played," as if flexible at the joint, or insertion. *Size*—Usually rather under moderate, averaging six pounds. *General Appearance and Carriage*—Resembling those of the cock.

COLOUR OF BLACK-RED MALAYS.—*In both Sexes*—Beak yellow, or yellow striped with horn. Comb, face, deaf-ears, wattles, and throat brilliant red, sometimes of a darkish hue. Eyes pearl, yellow, or daw; usually pearl with a yellow ground. Shanks a brilliant yellow. *Colour of Cock*—Breast and under parts glossy black. Hackle, saddle, back, wing-bow, &c., glossy dark red, varying to reddish maroon; a glossy black bar across the wing, and secondaries reddish or rich bay. Flights usually black on inside web, and bay or red, or a narrow edging of either colour, on outside. Tail black, glossed with green. The whole resembling the darker Black-red Game cock. *Colour of Hen*—No absolute standard, but usually a tolerably uniform shade of reddish brown or cinnamon, sometimes wetted cinnamon, and not unfrequently partridge marked; the last to be preferred, as nearer the Black-red type. Hackle darker, generally a rich dark purplish brown, or brown striped with black.

COLOUR OF BROWN-RED MALAYS.—Comb, face, shanks, &c., as in Black-reds. General plumage of cock any good resemblance to Brown-red or Ginger-breasted Game type. Colour of hen very dark, or almost black.

COLOUR OF WHITE, BLACK, AND PILE MALAYS.—Black and White need no description. In Piles, the cock should have hackle red or reddish brown, saddle-feathers ditto, wing-bow reddish brown, secondaries bay, coverts or wing-bar white, just touched with colour, and breast white, or slightly marbled; tail white—in fact, resembling Pile Game. Hen white marbled, with reddish brown, as near to the Game standard as possible. In Pile and White Malays alone, a willowish tinge in the yellow of the shanks is permissible, but rather objectionable.

VALUE OF DEFECTS IN JUDGING.

Standard of Perfection.	
A bird ideally perfect in shape, size, colour, head and comb, peculiar Malay characters, gloss and hardness of plumage, and in perfect health and condition, to count	100

Defects to be Deducted.	
Bad head and comb	12
Plumage long, loose, or soft	20
Want of "shoulders"	15
Fanned or too erect tail	10
Faulty colour or marking	15
Willow tinge in shanks (of light birds)	5
Want of size *	20
,, ,, general symmetry	15
,, ,, condition	15

DISQUALIFICATIONS.—Single combs. Knock-knees, or any other bodily deformity. Feather on the legs, or legs any other than yellow, or in Whites and Piles willowish yellow.

* Size in Malays should be greatly judged by height, and it will be a tolerably correct rule to allow thirty inches high as an ideal standard for the cock, and deduct roughly about three points for every two inches deficiency. Every bird at present will need more or less deduction on that account.

CHAPTER XXI.

GAME.

THE preceding breeds treated of, like many others, are named after the localities from which, rightly or wrongly, it is believed they sprang; but the fowl now to be considered occupies in this respect a peculiar position. So long has it been identified with what is called "sport," while its real origin has become utterly lost in the vista of the past, that as, through the long centuries during which valour and virtue were almost synonymous terms (among the Romans quite so), one heroic bird after another has stood up to fight with the hereditary courage of his race for a meaner master's stakes, he has not only acquired the distinctive title of the "Game Fowl," but (sad irony on his sporting backers) has given to the very word itself a meaning of its own, so that in familiar speech we use it to express all that we are able to conceive of a dogged courage, brutal it may be, but which cannot fail, no matter what the hopeless odds against it, or the suffering to be endured.

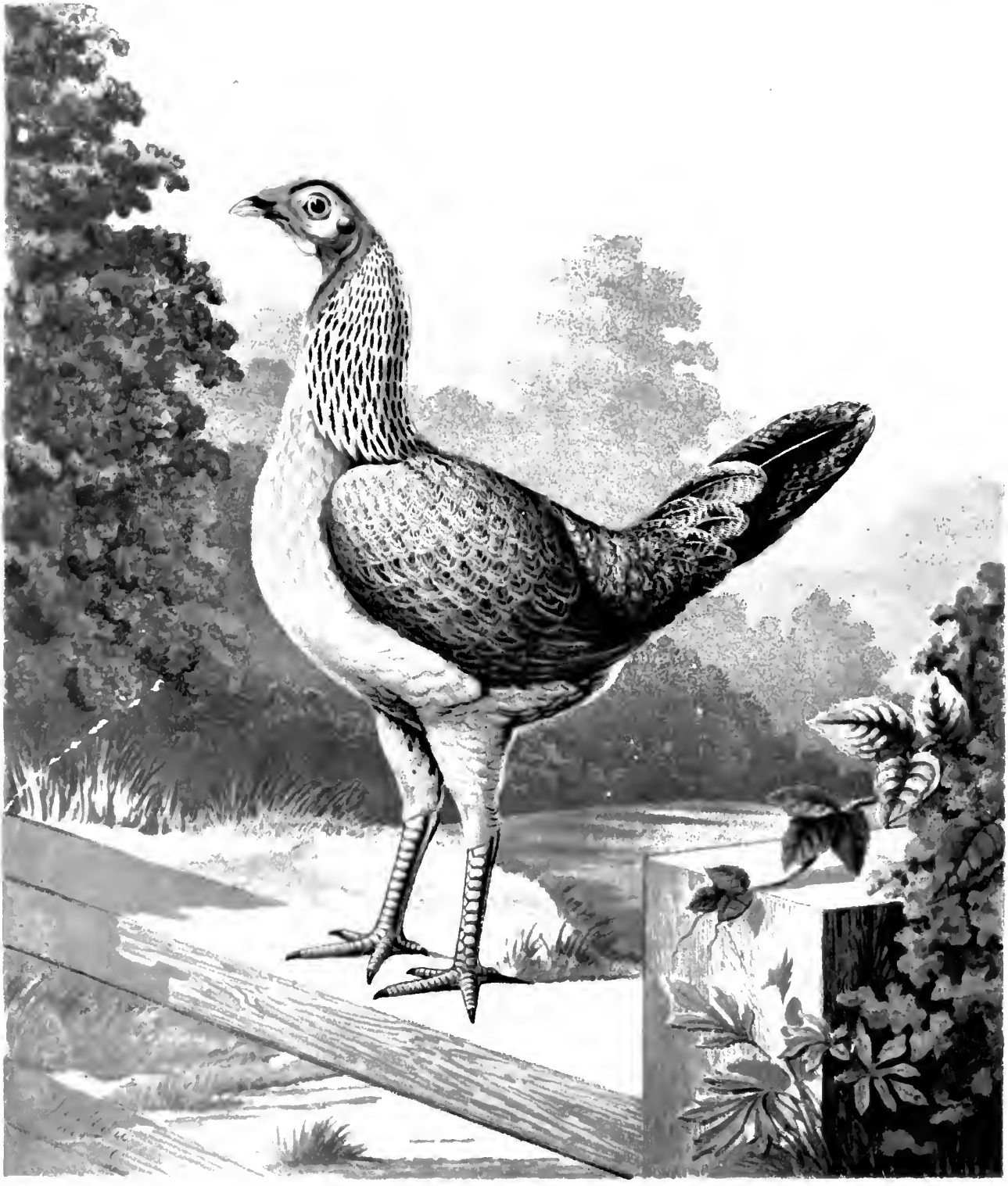
That all this has been unmitigated evil no wise or thoughtful man would pretend to say. The facts stated in this chapter by the able authorities who have at our request treated this breed, will show a passionate and wide-spread interest in cock-fighting during former times which may be new to many who have not previously studied the subject, and which must have exerted a considerable influence on the national character. The very use of the word "game" to which we have just alluded proves this, as does the fact that, whether or not the Romans introduced the sport and the bird into Britain, Britain alone, of all the Roman colonies, retained either, so that Buffon actually calls this breed the "English Fowl." Rude times demand rude virtues; and if all that has formed the training of the English nation could be accurately estimated, the singular extent to which courage and endurance now form part of the national character, and the old "brutal" sports of the people—which ever kept before them the highest embodiment of these qualities in the poor dumb creatures so shamefully abused—might be found to be in no small degree related. What can be said in favour of cock-fighting *now* is of course another matter. We have allowed all that can be urged to be fully and fairly put by an earnest defender; and we have endeavoured, not to meet it with a mere senseless sneer, but to show in what direction the great objections to it really lie, and which seem to us to have been hitherto greatly overlooked by the many good men who have hitherto assailed the pastime.

The real origin of the Game fowl cannot now be determined. For many reasons, some of which are ably stated by the contributor who has treated the subject of cock-fighting, we do not believe it was introduced by the Romans. There were *men* in Britain even in Cæsar's days; and the Romans got little beyond hard knocks from this quarter of the world. We had, in fact, an unhappy failing of "not knowing when we were beaten" even then; and coupling this disposition with the allusions quoted from historians, and with the fact that the Romans undoubtedly brought *from* Britain the matchless fighting-dogs so esteemed in the arena, the strong probability is that they found cock-fighting in vogue when they arrived. On the whole, so far as Britain is concerned, an investigation the details of which it is needless to give has inclined us to the belief that the sport

and the bird together probably came to us from Persia; the medium of introduction being most likely the Phœnician traders who visited the island for tin. To this theory we may frankly admit there are serious objections, the chief of which is the fact that no absolutely distinct and certain reference to cock-fighting can be found in English history (so far as we are aware) before the reign of Henry II.; but as it is really impossible to decide the matter definitely, further argument may well be spared.

When we leave Britain, the ancestry of the Game fowl becomes still more uncertain. The ancient Lydians, as well as the Persians, fought cocks, and probably from them the Greeks and Romans borrowed the diversion. Bearing in mind the close connection in some other matters between the Indo-Persian nations, we are not surprised to find that both in the present Indian Empire, and throughout the whole adjacent archipelago, the people are not only still passionately attached to cock-fighting, but that their traditions carry it back to the remotest antiquity. Hence many naturalists have attributed to the present *Gallus Bankiva*, or wild jungle-fowl of India, both the origin of the Game fowl and of all other domesticated breeds, for which theory there are strong reasons besides the general resemblance of that bird to the present Black-breasted Red Game; but we confess that, although at one time much inclined to adopt this view, and familiar with the arguments by which it is supported, greater acquaintance with the actual facts of poultry-breeding, and with the accounts of trustworthy travellers in India, make us less and less satisfied with it as affording adequate explanations of either, even after the amplest weight has been given to every detail of the Darwinian argument. It is a singular fact that Mr. Darwin himself writes with much greater modesty on these subjects than some of his more ignorant followers; certain of whom have professed to settle the matter in an *ex cathedrâ* manner which, in either practical poultry-fanciers or really intelligent naturalists, will simply excite the ridicule it deserves, whichever way the balance of actual argument (with which such writers as we allude to do not deal) may ultimately incline. There is much to be said for this view, no doubt; and Mr. Darwin has ably said it; but some of the arguments on the other side do not seem known to him. One of these is the fact that, while *black* is a conspicuous element in the colour of the *Gallus Bankiva*, the direction of that reversion on which he lays so great stress seems to be towards a red, rusty, or brown colour alone, with a distinct tendency to eliminate black altogether except in the tail. This fact is known to all who have much practical acquaintance with poultry-breeding and its followers, and, so far as it goes, it would point rather to a bird of the ginger-red type than the black-red, as the original of most races. Again, while such writers as we have referred to have sneered at the old *Gallus giganteus* of Temminck, many credible witnesses have of late, by repeated accounts, left very considerable doubt whether some bird at least intermediate in size between the *Gallus Bankiva* and the gigantic races does not, after all, inhabit the jungles of Eastern Asia; while the resemblance of the ordinary fighting-cock of India to a small Malay, and the singular persistency of this type of bird throughout India and the Malay peninsula, notwithstanding the utter absence of any attempt to breed it "to points" as we do, with the extraordinary hardness of its plumage, so closely approaching the Game, may raise further doubts on the subject, which no mere *ipse dixit* is sufficient to decide. As we have observed in the last chapter, further investigation is required, and more knowledge of facts must be obtained, before the question of the origin of the domestic fowl is even ripe for settlement; and we have only mentioned it again here, because, as the most typical of all breeds, the royal Game has the most interest of any in its decision. To the practical consideration of this breed we must now proceed.

That some change has taken place in the general style of Game fowls owing to the decline of cock-fighting, and the growth instead thereof of show competition, is unquestionable; but these



differences have been greatly exaggerated. For instance, when it is stated that the present weights are greater than the average of the old birds, it is forgotten that these were always *reduced* in weight by abstinence and training. In general, it may be said that the old style of bird was more clumsy and stout in make, with thicker bones and rather shorter neck, and tail somewhat more upright and spreading. As regards appearance, the change is certainly for the better, and it is the opinion of many of the best judges that nothing has been lost in other points; indeed, as many of the most successful exhibitors are even yet, "on the sly," enthusiastic fighters, they could not fail to detect any falling off in the old sturdy qualities of their fowls. It is true evident traces of the Malay cross are sometimes seen (it is best detected by the heavy eyebrows), but its supposed prevalence has been much exaggerated, and there is no want of birds whose purity and "gameness" of blood is as undeniable as their beauty in the show-pen.

For our notes on the breeding and exhibition of the modern Game fowl, we are indebted to the kindness of Mr. John Douglas, Clumber, Worksop, Notts, than whom there is perhaps no higher authority; combining as he does a full knowledge of both the old and modern Game fowl, and having bred, both for the Duke of Newcastle and on his own account, many of the very best winning birds. It will be seen that he entirely agrees with our opinion as to the comparative merits of the modern fowl just expressed; and all fanciers will feel indebted to him for the full and precise instructions, the first which have ever appeared in print, respecting the breeding of this noble bird to exhibition standards.

"Having been asked by many breeders of Game, as well as by the author, to write more fully for this work than has yet been done on the different varieties of Game, and the breeding of them from an exhibition point of view, I will give my own experience as fully as I can.

"Poultry-breeding has for years become a science in which calculations have been made and theories propounded, which practical experience of over thirty years has proved to be correct. The law that 'like produces like' is only true if the birds are of pure and known blood, and this is the great secret in breeding. For colour we chiefly look to the hen in Game, and to the cock for style and symmetry; but the most wonderful point is the suddenness with which any change of cocks in a run will change the blood and apparently reverse this rule. I have proved this by setting the fourth egg after change, having put a Brown-red to Black-red hens, taking away the same evening the Black-red cock. The fourth egg produced a splendidly coloured Brown-red cockerel; and wonderful to say, from one hen of pure *Black*-red blood I thus obtained nine *Brown*-reds, and not one Black-red. Nevertheless, the rule will generally hold good, of depending on the hen for colour. The self-same hen two years before, when a pullet, was left without a mate after the first two eggs were laid, and every egg of the batch produced a good Black-red. This is the mystery, how suddenly the influence of one cock seems *destroyed* by the introduction of another in the run; and there is no way of proving this so well as breeding the different colours in Game.

"As an instance of how birds with any admixture of blood will retain it and 'throw back,' even after twenty years have passed, I may mention the following:—A short, very hard-feathered Spangled cock having been put to a Black-red hen, a cockerel from this cross, put to the mother, threw some of the finest Black-reds ever seen in England. A cockerel from this cross, put to the hens from the first cross, gave a second family, which were bred backwards and forwards as required, and kept the colour well for twelve years. At the end of this time a cockerel and pullets being mated of the same hatch, *produced a few Spangles*, which were shown and won the first prize in the 'Any Variety' class of Game, at Birmingham. Again, nine years later, by putting together a cockerel and pullets from the same hatch, and from the same blood, I had a still greater number of

Spangles come out. This retention of the cross being so remarkable, I thought it worth mentioning, especially as the difference in colour being so great there was no mistaking it; and it shows how careful we ought to be, after putting together different colours, to keep it from re-appearing when not wanted.

"One very mistaken notion is the idea of most breeders as to the few hens they think ought to be put to a cock. Just keep in mind how many prolific eggs you will get from a hen after the cock has been taken away, and consider in that time, even if twenty hens had been running with the cock, whether during the length of time she would have been in laying trim—say while she laid eleven eggs—the cock would not have paid attention to each of those twenty, and the eggs be far more likely to produce strong chickens? I have proof, and very strong proof, even in heavy birds; for the most successful year I ever had in Dorkings I ran seventeen hens with one cockerel, and never had I such heavy and strong-constitutioned birds. Feed well, and give a good run, and I should not be afraid to run twenty-five hens with one cock, though he must be a young healthy bird; but even a two-year-old I should not fear to mate with eleven hens, and would expect to be successful.

"I am very sorry to see every now and then some novice or old antiquated breeder stating that the Game fowl has deteriorated within this last fifteen or twenty years. I myself have kept Game for about forty years; and when lawful to fight cocks have carried my Game cock to school to fight, and many is the three days' fighting I have seen in the town-hall, with magistrates for the principals; and I have even myself, when a boy, had a cock-fight with the head magistrate's cock, and won. Many is the main I have seen between one end of the town and the other; also town against town, and two or three battles a week the whole winter through. At night, after a hunt day, I have seen many a battle for more money than I should like to name. In those days we studied nothing but the blood. So the cock was 'game,' we neither looked for symmetry nor beauty of plumage; but still, at the same time, when we did happen to get a nice symmetrical bird, we prided ourselves on him greatly, and seldom but he turned out a 'clipper' in the pit. The main point is a firmness of flesh and great muscular power, with the least lumber; and many of our present exhibitors have often heard remarked from those who still often see birds in the pit, 'What a nice, commanding, "reachey" cock!—not one of the thick clumsy louts; but nice and springy, and fit to fight for his life!' Those who keep harping on the point that our Game fowls are not so good as they were, should tell us in what points they are not so good. They say they do not want them for the pit, and never saw a fight, nor do they want to see one; what then *do* they want? For my own part I consider there has been more improvement in the Game fowl than in any fowl we have within the last thirty years, if we place perfection in beauty, symmetry, purity of feather, more muscle, less but stronger bone, and more hardness of flesh. I consider we have discarded cumbersome flesh laid on where not wanted, got more muscle, more symmetry, purity of feather, and everything more pleasing to the eye. I cannot understand what people want. There is the 'game' in them now that will stand to be cut up if wanted; though sorry should I be to have to witness a grand and beautiful bird disfigured for that purpose. In the fields or yards, however, the Game cock is just as vigilant and fearless as he was thirty years ago; and hens at the present day are just as demonstrative and careful of their broods. So where do they see the 'want of game?' Those people, I am sure, are unsuccessful exhibitors; but if they would follow the advice of those who are successful, there would be none of this ridiculous nonsense about Game deteriorating, when it is far otherwise. Get such birds as I describe, and breed them; and if not successful in the second year, then complain: but you will not fail if you can or will educate the eye to beauty, symmetry, and purity of feather; and, giving up the idea of the old cart-horse

style, 'go in' for blood-looking animals, that are fit either to go the pace or stay, besides being all that you want in a show-pen.

"BLACK-BREASTED RED GAME.—I now give the points I consider a really good Black-red cock ought to have for a stock bird. Beak to be strong, slightly curved, and stout where set in the head. Head rather inclined to be long, and not round and bullet-shaped; the least possible indent over the eye gives a snake-like appearance which is much admired. Eyes bright red, rather prominent, with a fearless expression. Face a smooth fine skin; the throat the same. Ears red, not inclined to white. Neck rather long, and a little arched; short hackle, with the points just meeting between the shoulders, but reaching very little on the back. Back flat, wide at shoulders, and narrowing to the tail. Breast round and full. Stern to be clear between the hocks, not let down, but a clear line. Saddle-feathers close and short, and not too many of them. Wings strong, and not over long, having a great substance at the shoulders; not confined close at the breast, but to be seen a little detached, as if ready to fly at the first intruder—be he cat, dog, or cock—the points resting over the thighs, but under the saddle. Tail medium length, neither too long nor short, but nicely carried; neither 'squirrel' nor drooping, but between the two; not much spread out, but nicely 'Venetianed,' with about seven secondary sickle-feathers each side, the one nicely fitting just above the other; of course the two main sickles about four or five inches longer than the straight tail. Thighs round, stout, full of muscle, firm, rather long, but well carried in close to the body—not stilty, but so that you can distinguish their form and where set in when facing you. Shanks medium length, nicely rounded, neither flat nor quite round, with a nice clean joint in setting-on to the thigh-bone, well standing apart, and beautifully scaled. Spurs set low, and inclined to point back. Feet flat; toes well spread out, and the hind toe to come straight and flat out from the foot; not, as many do, drooping so as to put just the point to the ground. This latter form is nearly as objectionable as what is termed duck-footed, which is when the hind toe inclines to point forward the same way as the front toes. The toes should be a good length, and well spread out, with good strong nails. The colour of the legs should be willow or olive, to blend well with the colour of this cock.

"Plumage as follows:—Head and neck-hackles orange-red to the points; back and shoulder-coverts violet red, with a shade of orange; saddle orange-red; breast black, with a steel-blue shade all over the breast; tail rich black, with a slight purple bronze shade in secondary sickles. There are different shades in the Black-reds, but none blends better, or is warmer, and nicer, and pleasanter to the eye, than the above colours, which we will call No. 1. I will, however, give the colour of another very successful shade of the Black-reds, which is easier bred, but I must own is not so beautiful, and which we will call No. 2. The cock is more of a red clay-colour in hackle, deep rich red; back and shoulder-coverts a little violet red; the saddle similar to hackle; in fact, too much of a sameness all over to make the colour pleasant, but still they have the symmetry of the more favoured colour ones. There is also another colour of Black-red, but it seldom proves successful unless a poor lot happens to be exhibited. The hackle is red, darkly striped, running off to a light straw; back claret; shoulder-coverts red clay-colour; saddle almost a red straw. These birds, which I will call No. 3, are in general soft to the touch for want of muscle, and far from firm in the hand. These are about all the colours of Black-reds that we meet with at shows nowadays.

"So far as the cocks in the Black-reds are concerned, I think enough might be gleaned from these remarks to assist a novice, as this is intended for such, as well as a reference to be compared by older hands, in breeding from what they may have. Now I will give the three colours and

style of hens that we find most useful in all our crossing to get what we want for the show-pens in colour, beginning with style and symmetry, which will do for all three useful colours, or, I may say, shades of colour, as all are really one. Beak to be stout where set on the head, curved slightly, and sharp at the point; upper mandible same colour all over, viz., dark horn; comb small, thin, straight, and evenly serrated; head rather long, neat, and snake-like; eyes red and prominent, with a fiery expression, as much as to say, 'I won't easily submit' (which we sometimes see in *larger* game of the same sex); face bright red and thin; deaf-ear red and small; wattles thin and neatly rounded; neck inclined to be long, slightly curved, and short-feathered, the feathers meeting at a point between the shoulder when the neck is extended, and not so long as to form a sort of tippet; back in shape similar to the cock, but in the old hen inclined to be rather more broad and flat, tapering off to the tail; wings not inclined to be long, but to seem cut

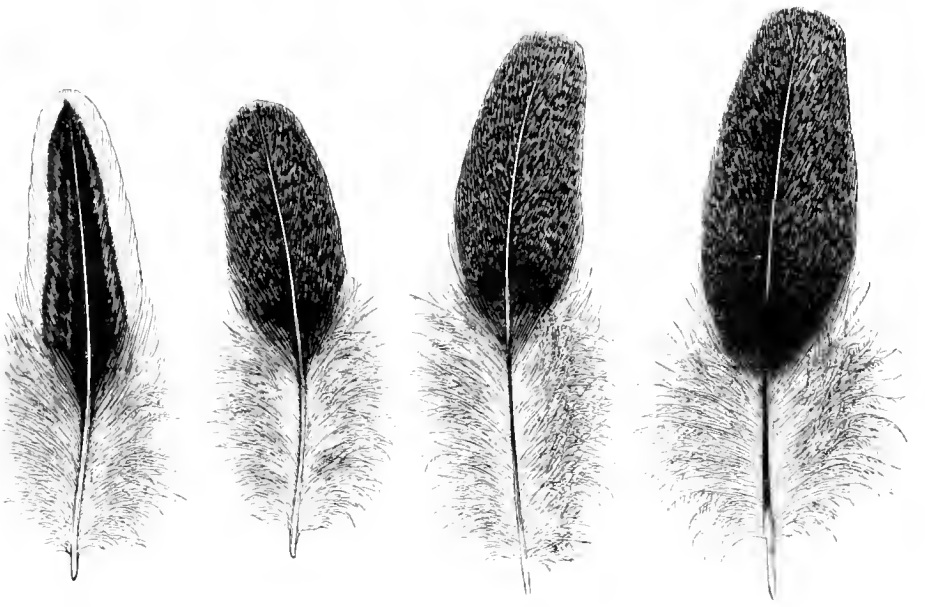


Fig. 69.—FEATHERS OF BLACK-RED HEN.

short in body, and powerfully made—as these are not birds meant for continual flight, they are not so long in comparison as in a bird of passage, but have very strong butts and rather short pinion or flight-feathers. The wings should be carried rather high, and close in to sides. Tail moderate in length, and nicely 'Venetianed,' that is, each feather lapping a little over the other, like a Venetian blind, to give it a nice, neat, compact form, not open and fan-shaped. The hen should carry it a little above the horizontal line. Breast broad and prominent; thigh-bone inclined to be long, but well kept close along the body, and not stilty, with great muscle, feeling firm in the hand, so that when you have her in your hand she well fills it up. Shank clean, and scales smooth; a moderate length of bone, finishing off with good, flat, wide-spread toes; the hinder one coming out level from the foot. Carriage upright, neat, quick, and active.

"The colour of Black-red hens is as follows:—Head and neck golden, streaked with black, but not the gold and black run into each other; body-colour partridge, or as near to a partridge-colour as possible, even to run up the outside or top-feathers of the tail; salmon-red breast, commencing under the throat, running off a little to ashy colour on thighs, without the least pencilling on flight feathers in the wing. This being the principal and proper exhibition colour,

we will call it No. 1. The partridge-marking ought on no account to run into any distinct *pencilling*, though it is sometimes described as such. It is a very small, wavy, irregular marking, just like that on the back of a partridge, and is shown in the engraving of feathers annexed, from a really pure-feathered Black-red hen (Fig. 69). We do often see real pencilling, and I know it is difficult to breed birds without; but such marking is the greatest curse of a yard, and so often a sign of a Duck-wing or Pile cross that it ought to be more discouraged than it is. The true and proper marking is as figured here, just like a partridge, and should be so described.

"The second colour of hen for breeding purposes is:—Hackle golden-yellow, streaked with black; body—at least back and saddle—partridge-colour of a Weedon or slight creamy tinge, but still partridge; the wings slightly ruddy; breast a red salmon, running off to ashy colour on the thighs. This hen is of lighter shade, in fact, all over the body, a softer or yellow colour pervading; but the partridge-marking just the same in character as the No. 1.

"The third colour for breeding is:—Head and hackle light gold, only slightly streaked with black; back and wings a quite light partridge, with a more even shade of gold all over, but not of the Weedon colour; breast a yellowish ash-colour; tail black.

"Either of these colours having the style and symmetry named can be bred from, and with success; but I don't say the first cross. The way I should start would be to put No. 1 cock with a clear partridge-coloured (or No. 1) hen, clear in the wing, and with no pencilling whatever on the flights of the wing; having a deep salmon-coloured breast, with rich golden hackle, with a deep streak of black in each feather. By thus mating you would get rare pullets, and sometimes a first-rate cockerel.

"Then again, put No. 1 cock to a rich partridge-backed hen, with ruddy wing, and rich golden hackle streaked with rich black, and a ruddy-ashy breast, described above as No. 2. Thence you get your bright-red, showy cockerels; but seldom a good pullet, not being dark enough.

"From No. 2 cock, being more a self-colour, and not that blending of different reds that is so pleasing in No. 1, you will get your rich partridge-coloured hens, with deep rich salmon breasts, and pretty free from pencilling, if mated with good partridge hens. Putting this cock to a red partridge (or No. 3) hen, inclined to 'wheaten' or 'Weedon' colour, you sometimes get a really beautiful bright red cockerel.

"With regard to the No. 3 cock, the only thing I have seen his colour get good has been pullets from the clear partridge (or No. 1) hens; the cockerels in general are loose-feathered, and too dark.

"There is also what is termed the Weedon or Wheaten-red hen—that is, a hen with buff breast; back slightly partridge, marked with buffy-red; hackle buff, striped with black; and tail black, inclined to be tinged with buff. The name was given, as many think, merely because that colour of Game hens predominated in the neighbourhood of Weedon; others say it is called from the skin of the red wheat. These hens are most valuable to a breeder for getting him a really pure bright-red cock, for which you put to them a cock of the No. 2 colour; but this has to be carefully done, and the notion about the Weedon hen being the best to breed cocks from has been harped rather too much upon. It is very well to use one cross, either with the bright-red, or No. 2 cock; but if you cross with the Weedon the second time you will get a blotchy breast and rusty fluff, the blood being too light to have too much of. These hens are also useful for breeding Piles and Duck-wings, as mentioned farther on; but the second cross, from hens bred from the Wheaten hen, has a certain softness of feather not desirable; therefore, all Black-red *hens* bred from this cross ought to be cooked. It is from the second cross the softness comes, the Wheaten hen herself being hard-feathered, and generally throwing very sound-feathered cockerels.

"Black-reds being the purest-feathered of the Reds, I have given them the preference in describing them; and by following out my advice I really think any one can breed and be successful in the show-pen."

Our illustrations are taken from some of the best birds ever seen. The hen was really pure-feathered, being quite free from the objectionable pencilling often seen; and the cock, besides his own merits, was remarkable as the progenitor of other well-known birds.

"BROWN-BREASTED RED GAME.—The same description of style and symmetry as the Black-reds will do for all Game, including Brown-breasted Red Game. There are several colours admissible for the show-pen, but I will begin with those at present most fashionable. In the streaky or starling-breasted cock, the head and hackle-feathers are deep orange-red, with a shade of dark in centre of feather; shoulder-coverts dark crimson; saddle a red maroon on centre, passing to a dark lemon and straw; breast dark, with a bay streak in centre of every feather running of on the thighs, which are also streaked with bay; tail black, sickles narrow and whip-like, and bronzed with a greenish gloss. Some like a dark smutty face, instead of the beautiful red-purple skin. Large brown or black eyes are necessary to this breed. In Brown-reds a little heavier build does not detract from the beauty of the bird, so more laxity may be taken in this

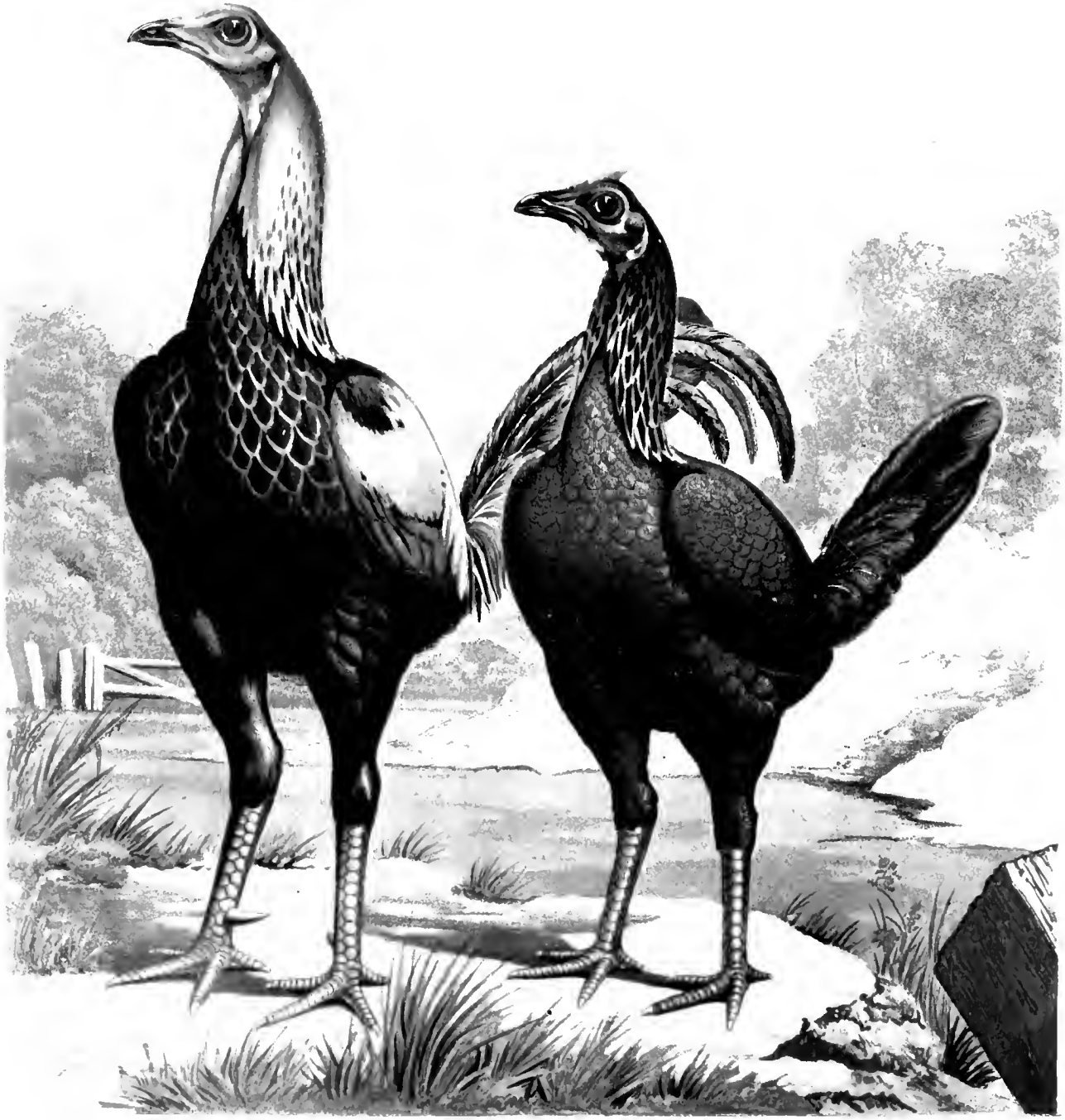
Fig. 70.

colour than the Black-red; but the same rule as to style applies here as to Black-reds. The Brown-reds have a hardness of feather that few strains of the Black-reds possess. I have said that the colour of the face is a matter of taste; but it is a certain fact that since the dark or gipsy faces predominated we have lost the beautiful bright colours in Brown-reds we used to have.

"The colour of hen to match the streaky-breasted cock in the Brown-reds is as follows:—Head dusky brown; comb and face bright purple-red or smutty, according to taste; eyes black or dark brown; neck brassy, striped with black; the legs dark or willow; body-feathers dark brown—or even in a dark hen almost black, with brassy hackle, would answer for the show-pen.

"This is the most fashionable colour; let us now see what they will breed. Some will come as near like the parents as possible in cockerels; others will come black-breasted, and too dark in hackles; others will be nearly crow-black, with only a dirty dark red on shoulder and back. Some pullets will come a nice colour, but some nearly brown; and others nearly black, without the brassy hackle, but only a slight tinge of copper in the hackle. In Brown-reds it is very difficult to get above one or two in a brood fit for the show-pen, or even fit to breed from the following season; in fact, nothing we get in the Game line breeds so true to colour as the Black-red, which is easiest to breed of all the varieties.

"Another very fashionable colour in Brown-reds, as frequently shown, and by many thought even more beautiful than the starling-breasted, is as follows:—Head and hackle orange-colour throughout, with little no streak in the feathers; shoulder-coverts a shade lighter crimson than the streaky-breasted birds; saddle to match the hackle, or dark lemon; back a maroon straw; and breast an almost black ground-colour, but every feather beautifully laced with light bay—a mere slight lacing round the edges, not at all running into the feather. The hens to match these



cocks are a brilliant black, with rich golden-striped hackle, as in Fig. 70. The feathers of the cock are of great beauty, and are well shown in the accompanying engraving (Fig. 71). The accuracy with which the back and saddle-feathers are striped in good birds is remarkable.

"From this we will go to the brick-breasted, which is the nearest approach to the laced-breasted Brown-reds. The cock is a similar colour in back to the last, but a little more crimson on shoulder and less orange in the hackle; and in general, lighter in colour on the saddle, more a shade of orange pervading all over the body; black or brown eyes in general, and red in the face. I should cross this colour with a pure black-bodied hen, when you would get a portion of streaky-breasted cockerels, but few dark pullets, most of the pullets running light browns; but being very

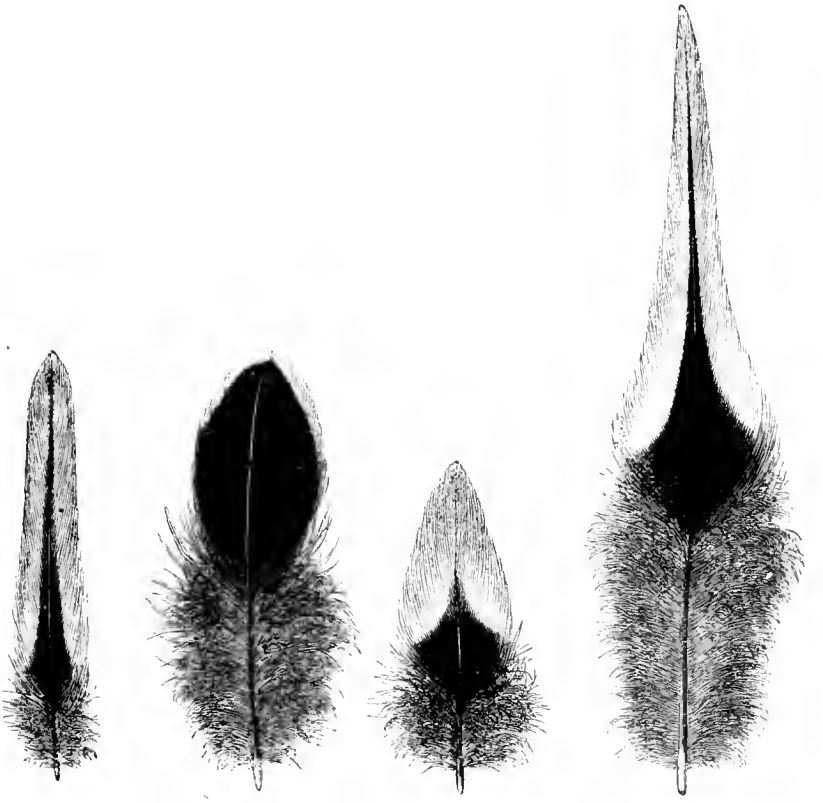


Fig. 71.—Feathers of Brown-red Cock.

pretty and slightly pencilled, they are much admired, and make very good mates for ginger Brown-red cocks, their colours seeming to harmonise well. The ginger Brown-red cock is a most beautiful bird; head and hackle-feathers being a dark lemon; back and shoulders a blueish red, slightly crimsoned; breast a dun buff, mottled; and tail jet-black. There have been few of them at our shows of late years.

"The true Ginger-red, also a most beautiful fowl, was however at one time highly prized and much sought after by fly-fishers, being also noted for swiftness in the cockpit.

"The colour of the Ginger-red cock is as follows:—Head and hackle rich clear blue-red; eyes brown or reddish brown; back, shoulder-coverts, and bows of wings, blue-red; breast a ginger-blue—in fact, a blueish cast prevailing all throughout, even the tail showing a shade of blue. The legs are bronzy yellow, or willow, and the style and shape light and springy. The hen to match is a

brown-blue, blue pervading all through as in the cock. They breed pretty true to colour, and sorry I am there are never now any shown, for they were really a pleasant variety to look upon, and the cock's hackles and saddles much sought after, as I have said, by fly-fishers. In the pit the cocks were wonderfully active, quick to attack, and quick to retire, and very difficult for the antagonist to lay hold of."

Our illustrations of Brown-reds represent two beautiful birds of the laced-breasted type. The hardness of feather in both was extraordinary.

"DUCK-WINGED GAME.—The Duck-wing is one of our most beautiful breeds of Game; the bright gay colours are so beautifully blended together that no one, not even a non-breeder, fails

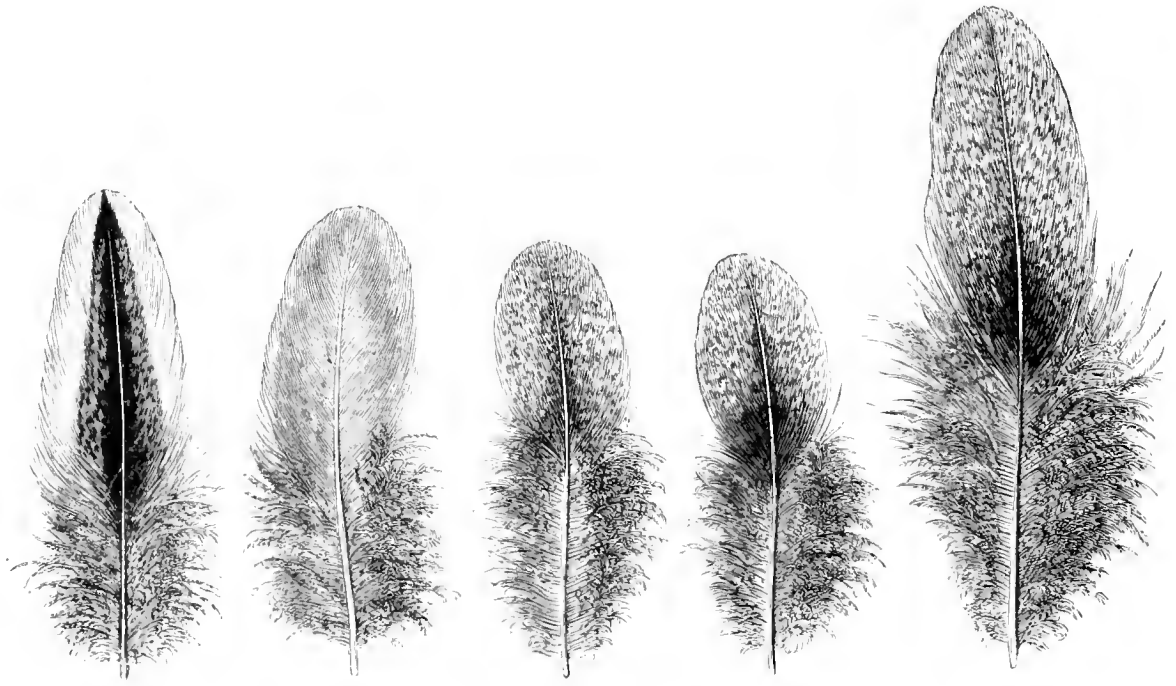


Fig. 72.—FEATHERS OF YELLOW DUCK-WING HEN.

to admire this splendid bird. His face is well-defined crimson; the head just covered with silver-white small fine feathers; hackle almost white, only a tinge of straw pervading; his back a maroon straw and claret; saddle just a shade darker than the hackle, the feathers being very fine and short, just long enough to hide the points of the wings. The shoulders are a nice brass or brassy maroon right from the butts to the clear steel bar, and no light streaks, which will however appear, if not very carefully bred, just about one inch from where the brass-colour begins from the butts; the shoulder-butts themselves Black; breast black; tail black, with a shade of bronze pervading the sickles; eyes red, legs willow or yellow; weight from five to six pounds.

"The hen to match in the show-pen should have the head grey; comb and face bright red; hackle silver-grey, darkly striped; breast a bright salmon-red; back and shoulder-coverts ought to be a slaty-grey, free from any ruddiness or pencilling. The tail a dark grey, almost black; inside fluff a steel grey; legs willow or yellow. Fig. 72 represents the feathers of the hen very accurately, except that the colour of the breast cannot be given in an engraving.

"To breed Duckwing cocks and hens, and to get the rich colours, you must have a cross from the Black-red each way. Sometimes you may get them by breeding together, but rarely cocks; hens you can. It is always best to put a pure-bred Duckwing hen to a really fine, bright Black-red to get the cocks; all our best birds are bred this way, and the purer-feathered Black-red the cock is, the brighter you get your Duckwing. In breeding for hens, either Duckwing cock and Duckwing hens put together, or a very hard, good partridge-coloured Black-red hen, will bring what you want; but if you get too much Duckwing by itself, you will have soft, mossy-feathered birds. The way to obviate this is every second year to breed a pure Duckwing hen or two, and put her to one of the clear bright Black-red cocks. The reason we see so few really good Duckwings, either in hens or cocks, is that it takes so great an amount of care in the crossing to keep it any way up to the standard; but when got, there is nothing more beautiful in the Game fowl.

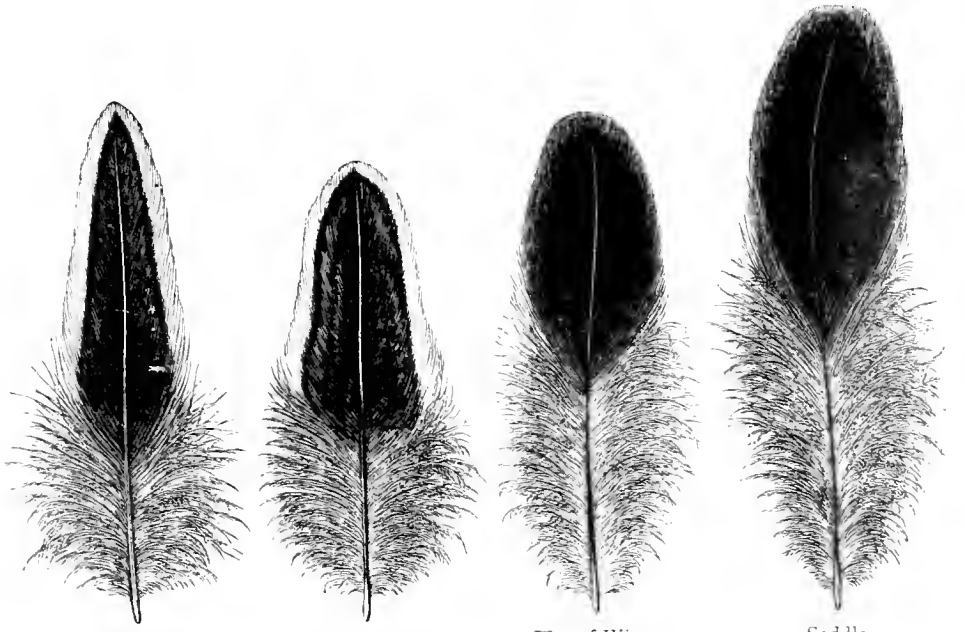


Fig. 73.—Feathers of Silver-grey Duckwing Hen.

"A bright brass-winged Duckwing cock crossed with Weedon hens will also throw grand cockerels, but no good pullets; these last being too light in the breast and with ruddy wings, with a mealy appearance in the back-feathers. But here again you must not cross too much, or you will get mealy and indistinct colours, as well as softness of feather; hence it is bad for a novice to go too much into crossing, but he should buy the purest-feathered fowls he can get, and breed till he finds out a little by experience.

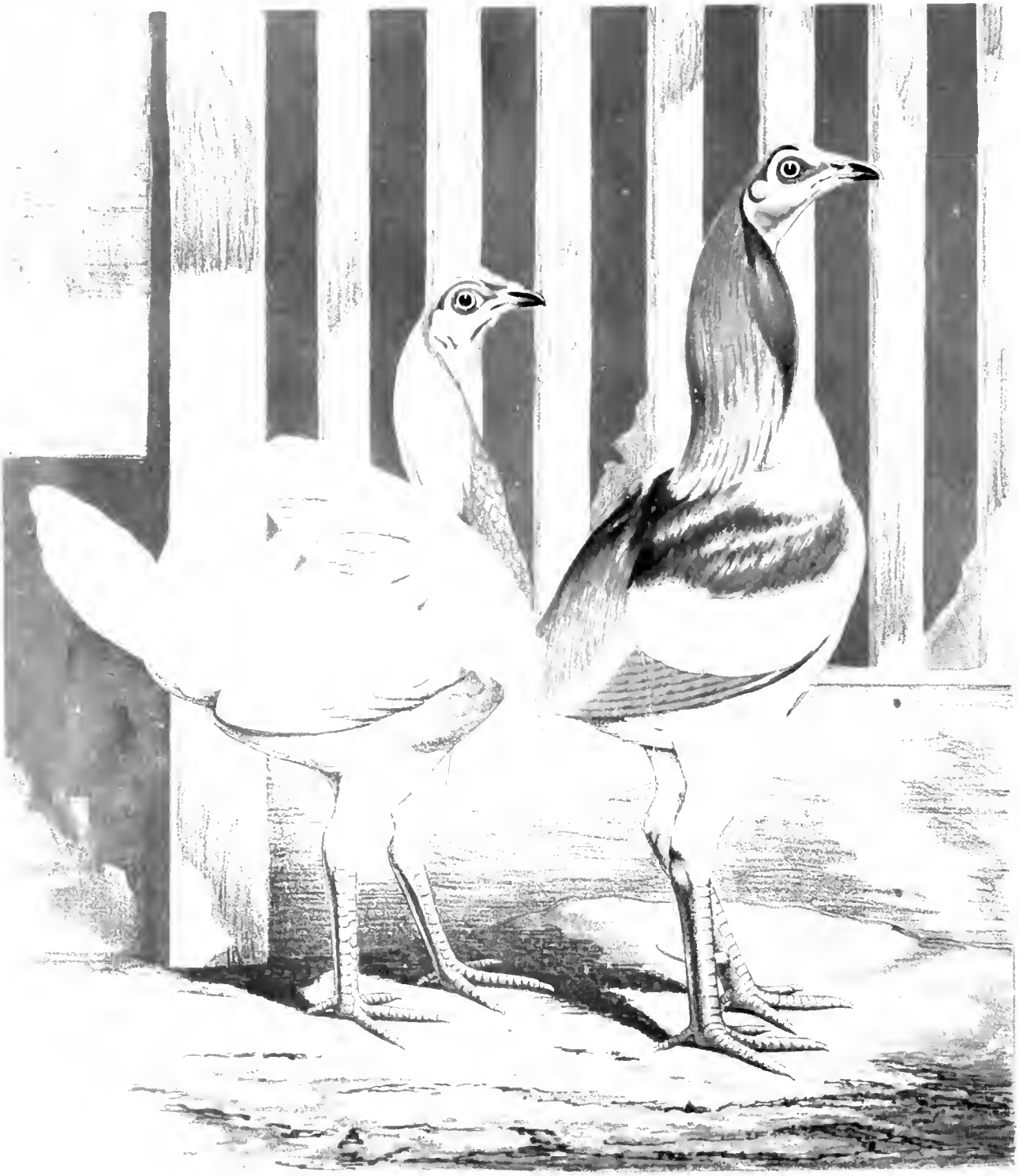
"The Silver-grey Duck-wing is a most handsome fowl, so is the Silver-grey hen to match. At one time, say fifteen years ago, we used to have some pens of them exhibited, and they were very much admired by Game breeders: but, unfortunately, most shows of Game at that time were judged by men that really did not know Game, and believed they were a cross of Silver-grey Dorkings; therefore they were passed over, and breeders got discouraged, and gave up the breed solely on that account. The face was red; hackle right from the crown of the head a pure white, without the least dark streak; back and shoulder-coverts a nice silvery white, running into a black, with bluish cast at butts of shoulders; saddle the colour of hackle, with a beautiful well-defined bar

of steel-blue feathers on the wing, which gives the whole class of these fowls the name of Duckwing, being similar to the bar on the mallard's wing. The under parts of the body were black, and breast black with a slight blue cast; tail black, sickles sharp and fine, and secondary sickles short, and standing or carried just one touching the other, with a green bronzy-black appearance, very little tail-coverts being carried in this breed. They were in general a hard-fleshed fowl, short in feather, and carrying very little of what is termed offal, that is, any clumsy weight where not required; they were also noted for their quickness and long endurance in fighting, and I have seen cocks of this breed kill four and five adversaries before leaving the pit. The hens to match are of a quiet colour, almost approaching to some coloured Brown-reds, being of a dark grey body, striped with silver slightly on most feathers, giving it more of a laced colour; the breast being a little more starling-marked; hackle dark, laced with silver; tail black, the outer feathers slightly brown; legs dark willow or black. These colours are different from what are sometimes given for the hen; but the fact is the breed has not been shown for nine years, when Mr. Dixon showed the last pen of them at Preston; hence they have been described by people who did not know them. They were, in fact, a true breed, which needed no crossing to get the colours, and so the hen was always darker and duller than the yellow Duckwing. Feathers from a Silver-grey Duckwing hen are shown in Fig. 73, and by comparing with the yellow Duckwing feathers on the preceding page, the difference will be readily seen. These feathers were plucked from a beautiful hen belonging to Mr. James Fletcher, of Stoneclough, near Manchester.

"What are termed Birchen Duckwings are merely birds bred from Duckwings on both sides, and sometimes will come from the cross of Brown-reds and Duckwings. This breed cannot be admired, for the simple reason that there is no purity of feather. The nearest description that can be given is as follows:—Head and hackle dark straw, mixed with rusty brown; breast, creamy brown, a "Hodge-podge" colour of cream and rusty brown straw; saddle, straw and rusty brown; wing-butts, dull brown; bow, copper-brown; coverts, mottled rusty brown and claret, with a dash of straw; tail black, slightly bronzed; legs willow or carp. Hen to match, a dirty dark grey, almost a brown—in fact, the Silver-grey hen in all points, only browner, and few distinguishing colours or markings, the shoulders being a little greyer than the back. They never had many admirers, not being bred for, but coming from crosses; and not being tried for, and no one seeming to wish to keep the breed up, it is seldom now to be met with.

"PILE GAME.—This is a breed very much admired, and always was. There are several varieties which merely vary in a few different-coloured feathers, such as the Worcester Piles and Cheshire Piles, having a few black feathers intermixed in body and tail; whereas the Lancashire Pile is of pure colours, being white where a Black-red is black, and such we will describe, although a slightly-marbled breast is highly prized if not too heavy:—Symmetry a little lighter or more sprightly than a Black-red in general; head a chestnut-red, hackle running a little lighter in colour than the head; face a rather brighter red, and the chestnut carried right to the point of the hackle. Back, chestnut and claret colour; shoulder-coverts and bow of the wings a rich red violet; breast, higher part marbled, or each feather laced with a pale chestnut inclining to a shade of blue; wing-coverts white edged with red chestnut; the tail white or merely a slight tick of black in the sickles, both in great and small sickles; thighs white; under part of body white; eyes red; legs yellow, white, or willow.

"The Pile Game hen's head is a light chestnut; hackle white, faced with yellow chestnut; the back a white ground-colour, slightly laced with red, a shade of gold prevailing; and salmon-coloured wing-coverts almost similar to back, but just a little heavier in the dark colour; breast a



rich chestnut right up to the throat, running off to a white, but not pure on the thighs; tail almost a pure white; eyes red; legs yellow, white, or willow.

"Piles breed true to colour, but now and then a cross of the Black-red is thrown in to give hardness of feather; but let me beg of all that cross in this way to *destroy every Black-red* produced from this cross, for when it gets about the country it is most mischievous in the Black-red blood to those that are deceived with it, taking all the rich bright colours away, and producing those soft, mossy, mealy-coloured pullets and cockerels, with light reddish straw hackles and saddles, besides a softness of feather, which are sometimes seen. I have detected and pointed out the cross at shows to a few of our oldest breeders at times; more especially once at Leeds, where a cockerel of this description gained a cup, and when inquired into my doubts were proved correct: hence the necessity of cooking all of the Reds which result from this cross, and only keeping the Piles.

"You can also get a very rich Pile by putting a Weedon hen to a White or Pile cock."

Our illustration represents the very best Pile cock we have seen for at least seven years. We should have preferred yellow legs; but with this exception we do not think there was a single point to be desired.

"WHITE GAME is a beautiful variety. When in a nice grass-run a whole flock looks well, but when kept in confined spaces, and they get their feathers soiled, the beauty is gone, only symmetry left; and it is strange to see how few really grand and symmetrical Whites you find, and fewer still with the closeness or hardness of feather that is desirable in Game fowls. Whites were always looked upon as delicate, and few came off victorious in the pit; so no care was taken of them to improve either hardness of feather or style, which has been done in other breeds. There is no doubt but they can be improved in both qualities, and there is really a good opening at present for any one to go into the White Game breeding. I should select a really rich Red Game cock, as short and hard in feather as possible, to cross in with; kill all the Red chickens; select then a White cockerel from this cross, and put to the White hens had previously, and the White pullets from the cross to my pure White cocks. This is where Piles have gained so much on the Whites: by the benefit of the Black-red cross, the feather is shorter and harder; better symmetry and hardier constitution are got, and altogether a much better bird.

"To describe the White Game fowl, the one word White would do—head and hackle pure white, body white (a least shade of yellow not a disqualification), tail pure white, breast white, legs yellow or white, eyes red. The White Game hen everywhere white, but eyes, comb, and wattles, which are all coral red; and legs yellow or white. The reason I put yellow first for legs is that I think it is a colour that harmonises better with the white than the same colour; of course the beak must match the legs.

"BLACK GAME are not so greatly admired—only by the few that have kept them for any purpose—although at one time they used to be kept for the pit in some districts, but not being found so quick and active as most breeds, they were discarded, although 'game' to the death. The colour is a most splendid black, of metallic brilliancy, shades of green and purple pervading the whole body, with a coral-red face; the legs dark willow or black. The hen also a pure glossy black, with a red coral comb and wattles. I have often thought a cross from a dark Brown-red hen would greatly improve this breed, both in style and hardness of feather, by acting on the same principle as in my advice on the White Game, killing all the Brown-reds, and reserving nothing but the Blacks.

"These are about all the varieties usually exhibited, but we have many other local

breeds, though nothing self-coloured. There is Black with brassy wings, the hen to match; mostly bred from birds a dirty black with a blue shade. Also the Spangles, almost every other feather being red and white, and tail black and white; the hens to match this are nearly the colour of a Houdan hen, only more broken in tint, and not inclined to spangle so evenly. The Furness Game are a smoky blue, with brass wings, and almost a black hackle: hens blue, speckled with black streaks, hackles dark, tail dark. Cuckoo Game is a very scarce variety, not much prized either for beauty of feather or style, being a smutty blue in body-colour, with light markings all over; hackle a shade darker than body. This breed could be greatly improved with the cross of the short-feathered ginger Brown-reds. I think by picking the Brown-red to cross by with a shade of blue in him, there would not be so much chance of losing the cuckoo-markings as with any other cross. There are, as I have said, several other local breeds or colours; but being never seen at our shows, and not at all attractive, it is hardly worth while giving them a place here.

"Game hens, on the whole, are good average layers, and there are no better mothers for protecting the chickens. I have seen a Game hen with chickens drive off all sorts of enemies, from a horse to a rat, and I have seen a Game hen actually kill a rat, a rook, and even a hawk; nothing is so big or savage but that she will defend her brood from it. In general I put eleven eggs under each hen. Unless a few hens hatch off the same day, we are obliged to set the coops far apart, or destruction would be the result. The best time to get Game hatched is from the middle of March to the end of April. Get them to nice cottage-runs as early as possible after they leave the hens; and, if this is not convenient, divide pullets and cockerels—it will save many a fight. Dub as you find walks for them. The age for dubbing is in general seventeen or eighteen weeks old. Dubbing, I need hardly say, is the removal of comb, wattles, and ear-lobes. To do this properly, so as to cause the least loss of blood, the cock should be held by an assistant by the thigh and shoulder of the wing, pressing the bird close to his breast with one hand, while with the other he lays hold of the comb, keeping the bird with his head and breast slightly turned up. The operator then lays hold of the wattle, inserting the point of his dubbing scissors at the lower mandible, and striking straight for the ear, leaving the old skin about half an inch, or hardly so much, between your cut and the eye. When you get to the ear commence again at the under side of the wattle, and run the point of scissors about half way down, then dissect gradually up to the ear. I have often taken the wattles off in this way without losing a salt-spoonful of blood from both wattles. When wattles and ears are off, the assistant takes the cockerel well in hand by the shoulders and thighs, when the operator inserts his left thumb across the inside of the beak, placing his forefinger at the back of head. Care must, however, be taken not to choke the bird. Then setting his scissors close and firmly on the head, straight up from the beak, with one cut, by keeping the scissors pressed well down as he cuts, he will take the comb clean off; then merely a slight cut each side of the beak, to take off a small excrescence that would make the setting in at the beak heavy, and the operation is over, and, if convenient, the cock may be tossed up in the air. The blood usually stops at once, and nothing more is required. He will then be nice and red again in six weeks, and fit to exhibit.

"It is a well-known fact that all our most successful strains of Black-breasted Red Game at the present day, and for the last fifteen years, sprang from close to Derby, and were bred by a gentleman that exhibits but seldom now; but when he does exhibit there is always something to admire, and the pen is very soon claimed. All our different strains and yards of any note in the Brown-red Game, again, have sprung from and around Nantwich, in Cheshire, and at the present time I could not name a yard without Nantwich blood. In Pile Game, St. Helen's, in Lancashire,

has the best and most successful yards, and is where most of our present Pile breeders have had their blood from. In Duckwings, for many years back Staffordshire and Nottinghamshire have had the best, though Cambridgeshire has come to the fore lately. Of late years, I am sorry to say, Duckwings have gone back, both in hens and cocks; but I believe from this date they will improve, for I am aware of several of the old hands going to do their best with this breed.

"A few hints as to rearing will not be out of place to those who may be about starting. Firstly, we never put more than eleven eggs under a Game hen. When hatched be in no hurry to take them from the nest, for they will want nothing for twenty-four hours, and very little then; and as you should feed the first two or three days with egg custard and a few dry crumbs of bread mixed with the custard, they will require *no water;* so put none near for them to dabble in. In a day or two take the hen from where she has hatched to a dry shed facing the south, or a dry bank sheltered from north and east winds, and coop them on the ground. If too wet, put some dry ashes under the coop, soft and free from lumps, and by no means put them on boards, for by this we get crooked toes; and rough cinders or gravel sometimes indent the small gristle of the breast, and if it gets the least askew while with the hen, it soon goes worse and worse. I have heard some breeders say they have had them come straight, but I have always had reason to doubt their word. You may let your coop remain for four or five days at first, by merely drawing the hen's droppings out. When you do shift, do so at midday, and if damp or wet put more dry ashes or dry earth at night. You will find fussing about this dry lodging pay for the trouble, by seeing your chickens come out quite frisky in the morning, and it conduces greatly to health. I always coop my hens for six or seven weeks with Game, feeding principally on egg custard, coarse oatmeal, and bruised wheat until about five weeks old, when I begin to give well-soaked whole wheat a few times daily, weaning them off to the common food by degrees. It is very useful, if there is no old hedge or low trees close by where your coops are placed, to drive four stakes in the ground, standing about a foot high, and place a hurdle on them, then lay a few loose boughs on it, This serves as a playground in a cold morning, as they soon commence to fly up and down after one another; then again, before the earth gets warm for their feet, they will cluster on the top of it when the sun comes out, and preen themselves. It makes a nice break between the coops, and is a protection as well, for if there should be any large bird on the wing they are under in a moment, which I have had many proofs of here, where the Swan, Wild Goose, and Heron are often on the wing. I do not let them roost until about three months old if I can help it, so that I have plenty of soft clean stuff to let them sleep on. I think they keep warmer in a heap, and grow stronger, and it establishes a stronger constitution. I always use the sulphate of iron in the water, and we never have the gapes or roup, and this I have proved for over seventeen years. The egg custard is made as follows:—Beat three eggs up in half a pint of new milk, put in a saucepan, and stir over the fire until it becomes a thick curd; then *press the whey out* by squeezing in a cloth. This custard I give every morning, and as they get older we mix with oatmeal and ground rice, which forms a very nutritious food, and we find them grow and thrive on it wonderfully. I attribute the great effect of custard thus fed, to the chickens getting the rich and strengthening diet the first thing every morning, and it is digested quicker than any other I know. If sulphate of iron is in the water, it is not requisite to change it so often as it would be if pure water.

"I must now say a little on the preparation necessary to make Game fowls fit for the show-pen. First of all, when taken off their walks to pen for a day or two, before sending off to show, gently sponge the head and face with some lukewarm water and soap, then their legs and feet. When thoroughly dry, get your attendant to hold the cock firmly but gently, the hands round the thighs, and his thumbs on the shoulder-coverts, the thumb not pressed in, but to feel and be ready

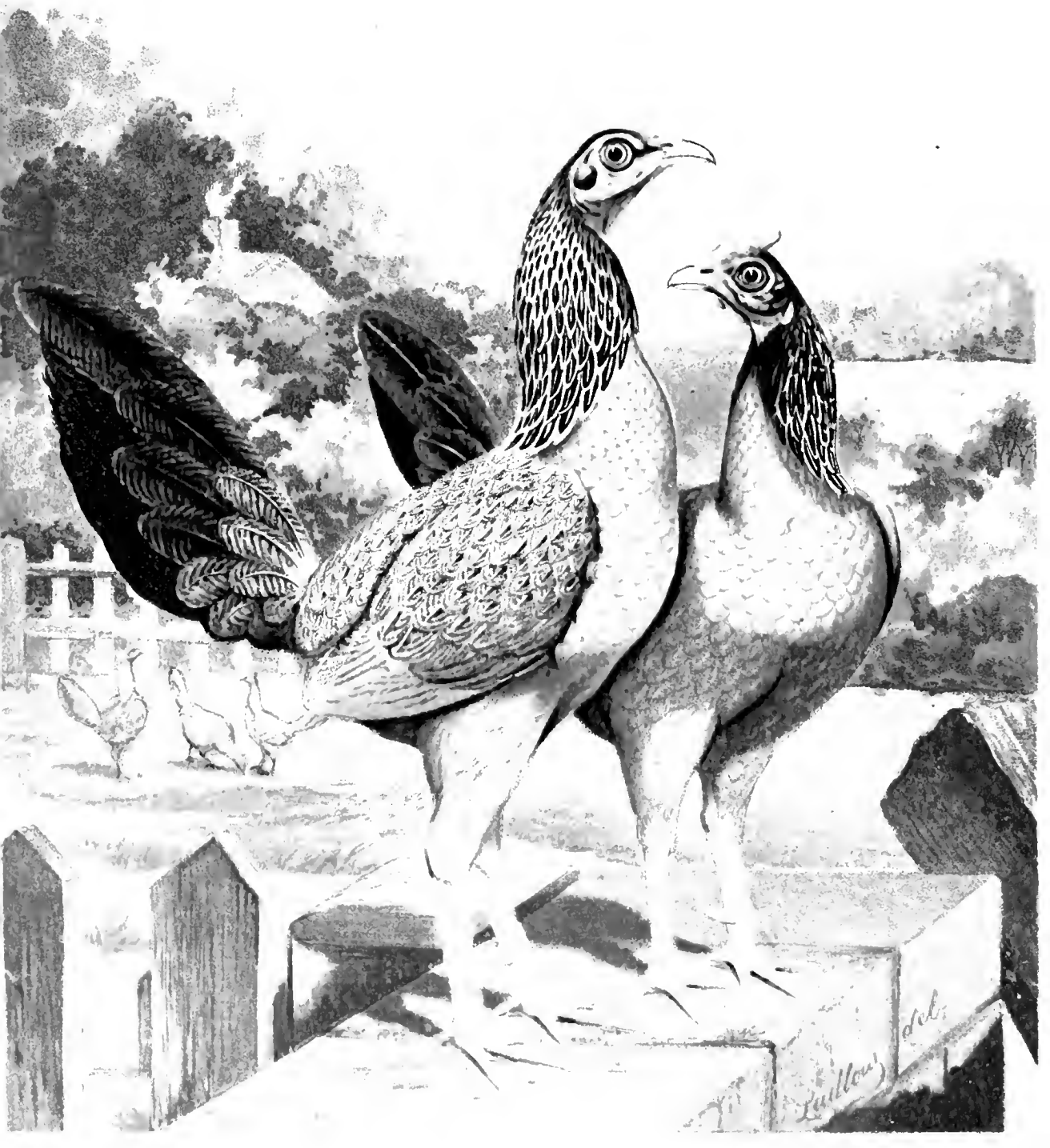
to press if the cock should attempt to struggle; the operation then commences, by putting the left hand swiftly round the cock's head or neck, and running the scissors straight from the back of comb to the beak, taking all the little spike-like feathers off close, which gives the head a much smoother and finer appearance; then draw the skin sideways off the cheek, tight, with the thumb, and carry the scissors along the cheek in the same way, which will smooth all the little spiky feathers off there. Many draw them out with small pincers, but I do not approve of this, as it has to be repeated, but when close clipped it is done with. All that is left to be done previous to sending off is with a small nice clean sponge, and a very little salad oil, to sponge the fleshy parts of the head and face, but not leaving a lot of oil on; this is what gives the nice bright coral-like appearance that most professional show-men's Game have their first day in the show-pens.

"A Game cock, if well walked, requires no feeding to prepare for show; but, if in low condition, about three or four days in a quite clean pen, feeding twice a day on a teacupful of nice boiled new milk and bread, with a handful of thoroughly good barley at night, will make a great difference, and throw a nice gloss on the feathers. This is all that is necessary, for it does not answer to train a cock for show as you would to fight. If living handy to his run, it is well to give a feed of split peas daily for a fortnight; but a naturally hard-fleshed bird, taken off his walk, may be fed on almost what you like. A cock for fighting is got up to a certain pitch just by a certain day, after which he goes back fast; but that would not do for a show. A cock should be shown as nearly in his natural condition as possible; but if fed up for showing he will show it the second day. If it were not to get the birds used to the pens, I would never pen one up even for an hour, and I can always count all the trained birds in a show by their falling off the second or third day.

"To keep them right on returning from shows, give boiled milk and bread, but no hard food, for the first day or so; then feed as usual, when, if of good constitution, they will be fit again in a week's time. For several weeks they will keep this up without perceptible injury; as, having no extra flesh to carry, like Cochins, they can stand it better."

Besides the varieties described or hinted at by Mr. Douglas, there is a well-marked and singular variety in which the cock is feathered like the hens. This breed is a great favourite in Devonshire and Cornwall, where it is often fought, and has been bred for generations back; and the birds pourtrayed, as will be seen, come from this part of the country. The origin of this variety is perhaps still more difficult to determine than that of other breeds of Game. Many years ago there were strains of it in the North of England, but for some time past it has become extinct in those regions. Some American writers, Dr. Cooper and other cock-fighters especially, have denied the breed to be "true Game;" but this arises simply from ignorance. If fighting be the criterion, no Game fowl will fight in a more hard and stubborn manner than the Henny, as evidenced by the report of a fight which disgraced the columns of the *New York Weekly Herald* so late as January, 1873, and by the constant experience of those who still fight birds in Cornwall; whilst, if purity of blood and constantly breeding true to points be the arguments relied upon, the proof is equally clear, as the Henny strain *never* breeds a long-tailed cock unless crossed. The contrary has been stated by many persons, but the mistake has arisen from various birds which have not been true-bred Henny, but only the product of some cross; such will, of course, breed both kinds of plumage, but the true-bred Henny never does.

On the whole, the probability is that the breed is descended from some very ancient progenitor, which accidentally exhibited the peculiar hen-plumage, and struck the fancy of its proprietor. In laced Bantams, which are known to have derived their hen-tailed character from a single cock which took Sir John Sebright's preference (and which was very probably itself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descended from hen-tailed Game), we see how apt the feature is to transmit itself with a little care; and that our supposition is correct, and that the strain once formed was preserved sedulously apart from a period now impossible to determine, is rendered further probable by the different colours and style of birds, which are very different from the standard breeds of Game. In style they are larger and heavier, occasionally reaching as much as nine pounds, and approaching the kind of bird formerly bred by cock-fighters much more than those now bred by fanciers. In colour they vary greatly. The birds represented are of a Red type, and of a strain which has been in Mr. Harris's own possession for thirty years, and that of his family for a much longer period; the illustration is of a mother and son, and the weights of these particular birds when in condition are stated as seven pounds ten ounces for the cock, and six pounds six ounces for the hen. There are also Blacks, Greys, and other colours, besides mixtures arising from crossing them. The Reds, and, in fact, most other colours of Hennies, have white or pinky-white legs, and, of course, white skins. These points, with their large size, make them decidedly the best for table of any breed of Game; their hardiness being also a recommendation to those who only wish fowls for table purposes, but who share our own opinion that the Game fowl is the finest eating of all varieties of poultry.

The varieties or colours known to and described by the old cock-fighters were almost endless. Caring, as they did, very little for colour merely, they bred all sorts; and some of these were known by names which could not be mentioned in a work of this description. As specimens, however, of the names by which some of the colours were known, we may mention Blue Duns, Red Duns, Mealy Greys, Polecats, Treacle-breasted Marigold Duckwings, Ginger-breasted Orange Blues, Dark Birchens or Birchen-greys, &c. Others, such as the Tassels, furnished with a tuft or crest of long feathers; Muffs, having a lot of feathers about the throat; Rose-combs, from the low, flat, spiked comb; Round-polls, showing clear indications of crossing with the Asiatic; and the Hennies described above, seem to have been really distinct breeds, but, except the Henny, do not require further mention.

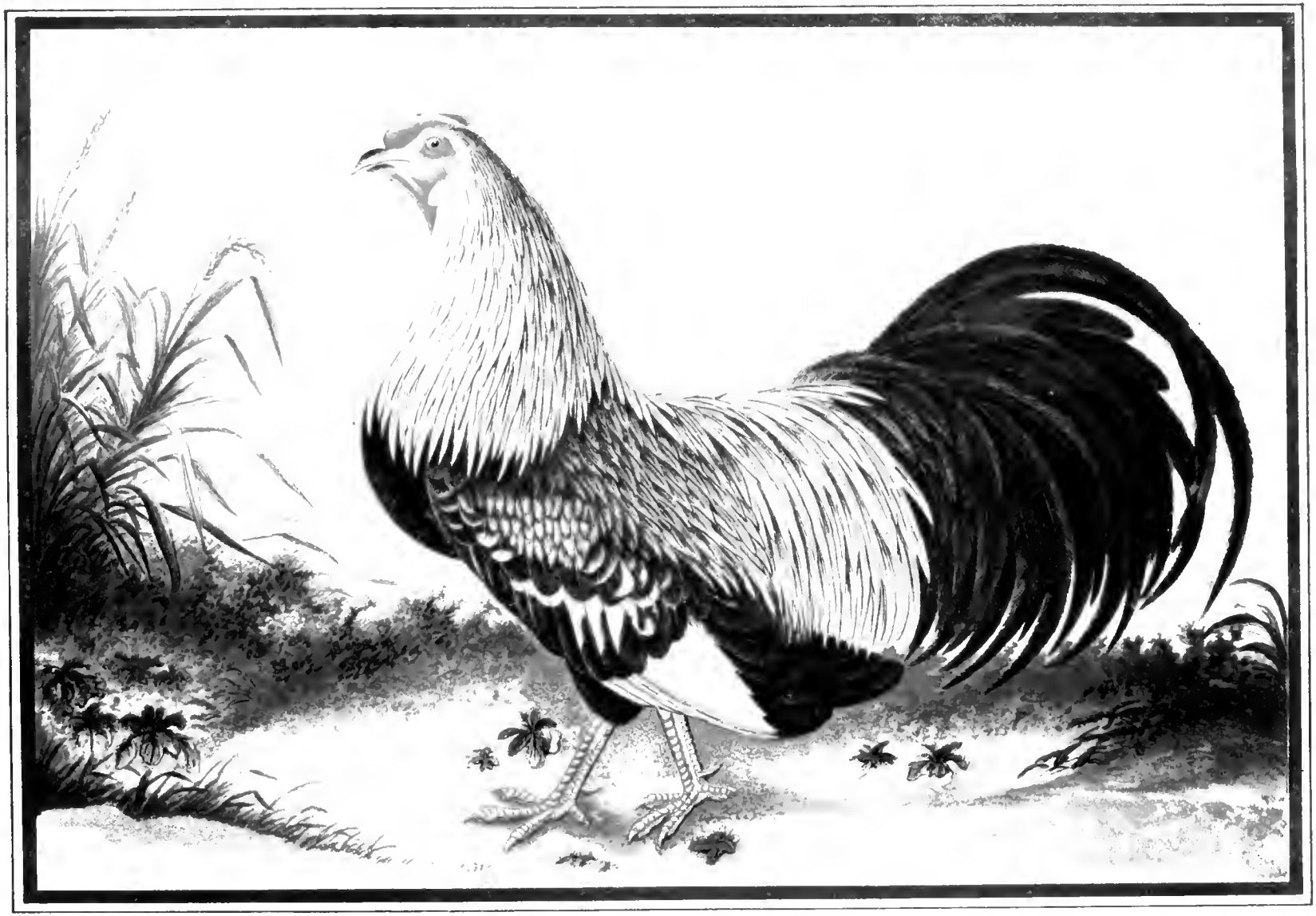
In America, where cock-fighting is still carried on to a very large extent, though in most States prohibited as in England, the same system of breeding is still carried on; indeed, the various strains are yet more confounded, American breeders of Game being as a rule vehemently opposed to all in-breeding. Dr. Cooper, in his work of 300 pages on "Game Fowls," which is written entirely from the cock-pit point of view, and which lies before us as we write, is very strongly against the practice, and in favour of crosses, contrary to the belief of the best English breeders of all kinds of stock.* He gives description by name of over sixty distinct strains; most of which, however, seem to derive their appellatives from the breeders, or other qualities than blood or colour. As a choice sample, we may quote the names of Counterfeits, Clippers, Tartars, Claibornes, Old Nicks, Strychnines, Bob Mace Shufflers, Billy Beards, Gee Dominics, Susquehanna

* We have in preceding pages given our views on this matter, which are in the main that good or ill results from in-breeding will chiefly depend upon *how it is managed;* but as these pages go to press a communication reaches us from Mr. James Ruthven, formerly secretary of the celebrated North British Columbarian Society, containing a statement which is rather interesting, and directly contradictory of some absurd statements which have been published as to the *necessity* of evil following from in-breeding, even in its worst form. He writes thus:—"There is one fact I became acquainted with three years since. A gentleman in Ireland got one pair of Trumpeter Pigeons, and put them into a large loft alone. He kept them there *fifteen years*, breeding and producing, without once adding fresh blood, only when they got too numerous killing off. The produce are as strong birds and as healthy as could be desired. This being the reverse of the common theory, I thought it worth trying myself, and I consequently have matched up the produce of one pair together for three years, and the young are still as strong and healthy as their parents." Of course breeding in this way is not to be recommended, but the contrary; and we only give such facts as confirmatory of the views we have ourselves advanced.

Reds, Jersey Nub-combs, Wild Irish, Baker White-legs, Conkeys, &c. He gives, besides, a list of more than thirty approved *crosses* between these supposed distinct strains; and bitterly inveighs against any in-breeding as ruinous to vigour and all other qualities valued by the cocker, a conclusion in which he will be opposed by universal British experience, as even the old fighting strains of English Game fowls had been perfected by the closest in-breeding in many cases. Dr. Cooper seems to give the preference to the so-called "Tartar" strain, of which, indeed, he seems from his work to be the special proprietor; and describes even the pure stock as breeding alike Black-reds, Reds with black breasts, Blue-reds, and Brown-reds, and either green (willow), blue, or yellow legs. They are very large, ranging as high even as eight pounds, a weight which would make English cockers stare; but there is no doubt they are hard and stubborn fighters. Of late, however, as we know from reliable and independent sources, the most highly-prized breeds for fighting in the States are those known as Claibornes (sometimes called Mobiles), and Heathwoods. The Claibornes were formed, it is said, by crossing the English breed known as Lord Sefton's (a Black-red), with Spanish-bred hens, and are remarkable for the hens almost always having long and sharp spurs, while the weapons of the cock are so keen that the birds are often fought naturally, instead of being armed with steel. Mr. Heathcott's strain is described by a notorious American cocker of the present day as the best he knows; but these, again, are said to be "bred in all the usual colours," showing great mixture of blood.

The Game fowls known in India have been already alluded to as very generally resembling somewhat the Malay type; but it is not meant to be asserted that they are really identical with the Malay. The best breeds possess much of the "Game" courage, in which the Malay is always deficient, and have moreover a "style" about them which no Malay ever had. It is very easy for such shallow naturalists as we have already alluded to to assume that such birds have been produced by crossing the *Gallus Bankiva*, or English Game, with the Malay; but all who know anything from trustworthy witnesses of Indian cock-fighting are aware that generations before any English Game could have been known in Eastern Asia, fighting breeds of the same type as now known were bred and fought. As we have before hinted, to say in the course of a professed "inquiry" into the origin of the domestic fowl that either these or the Malay itself have merely been formed by "domestication" from the smaller and quite different *Gallus ferrugineus*, is simply to take for granted the very question in debate, without the shadow of a reason for the assumption, except that no *wild* breed like the Malay or Indian Game is said to have been found—an assertion, by the way, which is itself as yet very far from being certainly accurate in point of fact. The whole subject is beset with difficulties which forbid, as we have before said, any attempt to discuss it here; and we shall only add a few particulars as to the various kinds of Indian Game.

The birds known by this name in Devon and Cornwall are undoubtedly bred from Indian importations, and, as we have stated in the last chapter, present the Malay type in some points very strongly, being chiefly wanting in the peculiar "sharp" shoulders so characteristic of that breed. They are, however, harder in flesh as well as in feather, and some of them are of undoubted courage. Mr. Montressor has shown some fine specimens, in which those undefined characters which all fanciers unconsciously recognise as showing "good blood" are strongly marked. These birds generally stand rather low, are agile and active, and have been known in India (and we believe in Cornwall too) to stand up well occasionally against good English blood. They are the prevalent style of bird kept in the neighbourhood of Bengal, and, indeed, more or less throughout the whole continent of India. Some of them are of great endurance, and such birds have been known to realise as much as 700 rupees; indeed, often no sum whatever will purchase them.



AYAM JALLĀK

In Malay proper, where we might expect to find the Malay type more strongly marked, the most esteemed kind of Game cock is, on the contrary, of a quite distinct character, differing alike from both the Indian and English breeds of Game, and evidently partaking more of the character of the true jungle-fowls. By the kindness of a retired officer who was stationed some years in the Straits, we are enabled to give a plate of the finest breed of Malay Game cock (using the word Malay in this case to express locality, and *not* the breed now so-called), from an original water-colour drawing, made with all the slavish fidelity of a native Chinese artist, and given us with several others, and many drawings illustrating the native spurs and other details, which he had made with the intention (subsequently abandoned) of publishing a work on Indian fowls and fighting. We have not even attempted to alter the clumsy way in which the artist has "set on" the legs, but copy the representation just as it is. The following notes are also supplied by the same authority, and may be relied upon as the personal experience of one who has mingled actively in the scenes here briefly depicted, though long since ashamed of having ever been engaged in "Satan's service" (we give his own words), and therefore desiring his name to be suppressed.

"The word *ayam* in Malay simply signifies a fowl; *jalak*, pronounced '*jalla*,' and sometimes called *ayam ejou*, or green fowl, signifies the colour and style here shown. Malay fowls are found good in all colours, for they are nearly all *Game*, and no doubt spring largely from the jungle-fowl, which abounds in the Malay peninsula, and also in Sumatra. The picture is the true colour, with all the minute accuracy of a Chinese artist's brush—an exact likeness of a true *jalla*. But I don't believe there is what you call a pure breed in India anywhere. The Bugis (pronounced 'Buggeese'), natives of Celebes, Borneo, Sumatra, and in fact all the Eastern Archipelago, fight cocks, and they all have their favourite colours, but few breeders or breeds as such exist—it is the colour, shape, &c., that gives the name.

"Malays rarely if ever cut combs, and never the feathers. There is no comb peculiar; they are both tall and rose-shaped, though the best birds have generally high and single combs. [This shows plainly its distinctness from the 'Malay' breed.]

"Some birds live for years and win many matches, for generally one escapes altogether. Malay cock-fighting is really much less cruel than English; a few minutes and the longest fight is over. The spurs vary in outline, some being straight, some curved, and some waved; but all have edges as sharp as razors, and are in fact like *blades of penknives* fastened on. This makes the fighting so quick. It takes yards and yards of soft cotton thread, wrapped round and round in all sorts of ways, to keep the spur firm *in loco;* and this is the first art of a Malay. The *golok* (a straight spur) is generally fastened under foot, close to the ground; the crooked spur in the natural position. They take a long time to heel the birds, and lots of people (friends) look at the position, and give their advice. All this time the money is collected on the mats—piles of dollars on either side—for they are very clannish, and if one side puts down a thousand dollars, the other must do so, or no fight; that is, unless a quarrel ensue, and they strike *each other*. Many of the birds are carefully trained. I have seen a man throw down a bird and hold out one finger two or three yards off, and the bird would fly at it and strike it! The birds know their owners, and they handle them most dexterously.

"Very few English engaged in the pursuit—I did not know above half-a-dozen that ever did; there was some danger of rows, and few liked to have to do with it, though nothing like so bad as an English cockpit. I *once* went into the pit at Westminster, and was so disgusted with a main I never repeated my visit. I never saw a fight at Malacca: they fight there sometimes, but it is the

purely native states that make such a business of it. The Rajah of Siăk, the first cock-fighter of his day (1825-6), once sent a deputation to me of five boats-full of officers, and about *thirty cocks*, with a pedigree to each bird; they were various colours and various names, and fine birds all. It was quite a grand ceremonial.

"The birds are generally put out of hand on the ground by the competitors at say eight or nine yards apart; but each man seeks to put his bird down at advantage, and there is manœuvring. The result depends much on training. Some run under and others fly high; it matters not how they meet, but meet they do, and *strike home!* They often meet together high up in the air. I have seen—at different times, of course, and different birds—two cuts from Malay spurs, which, if they could have been done at once, and in one bird, would have quite cut the fowl in two pieces; one cut going clean through the back deep into the breast, and the other through the breast deep into the back—so keen are the edges of these deadly weapons, and so dreadful are the wounds. Generally one cock at once falls dead or next door to it, so that the other has only to give just one peck and rise, and it is over; but sometimes the dying bird lays hold of the unwounded one, and by a well-directed blow kills his assailant at once, and wins the battle. They are seldom touched after once let go, because, as I said, one is *hors de combat*.

"When the Bugis come to trade in the Straits the betting is very heavy; and sometimes when a man loses all he has he becomes desperate—in Malay language, '*meng-a-mok*' (Anglicé, 'runs a muck'), and perhaps kills many. It is quite a royal affair when Bugis chiefs and Malay rajahs meet, and most intensely exciting, as they all have weapons ready for the least affront, and no man can offer another a greater insult than saying to him '*Etech ber taji*' (*i.e.*, 'Duck-spurred') —the contrast is between *the duck* and, to their minds, the noblest of birds, a Game cock! I have seen hundreds, and even thousands, of dollars lost and won on one fight of a few minutes' duration; and they go on most of the daylight after they once begin, about noon."

Besides the above particulars of Eastern cocks and cock-fighting, some little must be added respecting the "sport" as formerly and still carried on at home; for cock-fighting, though now popularly supposed to be suppressed, and, indeed, happily no longer permitted in public, is nevertheless occasionally practised *in secret* to an extent, and often by a class of individuals, which, if known, would make many of our readers and some (not all) of the "authorities" open their eyes in surprise. We have never witnessed a fight, and never intend doing so; but we *heard* of one only the other day being fought out at the country seat of an earl's son, and could name more than one highly-respected gentleman who is known to be addicted to the forbidden "diversion." We shall, however, confine ourselves to a few brief historical particulars.

We have already seen that cock-fighting took root in England at a very early age; but it is some consolation to reflect that from a very early age, also, there have not been wanting those high in station who deemed it an unfit pursuit to be allowed to Englishmen. It was prohibited by both Edward III., and Henry VIII. (though the less said about the humanity of the last the better); and since then many succeeding edicts were passed against it, including one from Oliver Cromwell. On the other hand, many British monarchs (including King James) have been partial to cocking,* and a century ago the pit at Westminster was allowed to claim the title of "Royal;" and its rules, though they can now only be understood by cockers themselves, and with the aid of other more modern regulations, which act as commentaries, still serve as the legal or acknowledged rules of such fighting as still takes place in England. This celebrated

* Amongst cock-fighters, the pursuit is always called "cocking," and those addicted to it "cockers."

pit is now entirely suppressed. We may add, as showing how openly recognised the pursuit under discussion at one time was, that a regular treatise upon it formed part of all the older editions of "Hoyle's Games."

Previous to fighting, the cocks were always subjected to a regular course of training or preparation, just as in the case of pugilists, or competitors in more innocent athletic sports; the object in this case, as in those, being to reduce the weight by eliminating all superfluous flesh, and leave the bird in the height of mere muscular power, spirit, and endurance. Every "cock-feeder" or trainer, almost, had his secret; and some of these secrets were highly valued. Aperient medicine was almost always given, followed by a spare diet of the most curious compounds; and the birds were regularly "sparred" or sweated, by having their spurs muffled, and being allowed then to peck and fly at each other, care being of course taken that they inflicted no serious injury. This treatment was carried on for a period varying from a week to a fortnight: but in some cases, where the time was very short, the poor birds were "reduced" very fast by being swung vigorously upon a clothes-line; their efforts to "hold on" causing them to perspire freely. Modern "authorities" skilled in these matters, doubt much if such severe treatment did not often cause more harm than good; but into this question we have no motive for entering.

Before fighting, the cock was "cut out of feather," as it was called; that is, the hackles and saddle-feathers were cut short, the sickles and tail-feathers were "docked" like the tail of a race-horse, the wing and other feathers also trimmed. This was to prevent the opposing bird having so much by which to take hold, as the Game cock fights *with his spurs*, and usually requires a hold with the beak to strike a deadly blow. The natural spurs were sawn off to about half an inch long, and over the stumps were affixed by hollow sockets artificial and more deadly weapons of steel or silver. These varied in length from one and a quarter to about three inches. We must in fairness concede that to describe metal spurs as *cruelty* is simply a mistake; on the contrary, they actually lessened—because they shortened—the sufferings of the combatants; though there is little doubt that individual blows are more sharply felt, since it is constantly found that cocks which will fight unflinchingly in their natural condition "will not stand steel;" and even some which will fight well thus, flinch under a long battle in silver. Hence it is probable that to enhance the "effect" of the courage of the birds was the original cause of their being thus armed with metal weapons, which were gradually brought to perfection by ingenuity, observation, and long practice, by which the most advantageous curves and other details were gradually discovered. Besides silver spurs, spurs were also made of steel, plated with silver; but neither of these gave such wounds as the steel spurs. Some spur-makers became much celebrated for the excellence and toughness of their productions, as well as the trueness of their curves, which last were obtained by mathematical calculation. The force with which a Game cock strikes is fearful, and none but the most exquisite temper of metal will stand the strain.

Various kinds of "mains" were fought, into all the details of which we need not enter. The ordinary or "short" main consisted of twenty-one pairs of cocks, which were fought for so much per battle, and so much the odd battle, or main. Sometimes sixty-one pairs were fought, which was called a long main. There was always an odd battle, to prevent the contingency of a "draw," but sometimes this happened by the odd battle itself being drawn (as by both cocks being struck dead at the same moment), and on one occasion, at Edinburgh, a "long" main was fought which lasted twelve days, and was finally drawn. The severest test of all was considered to be the Welsh main. In this sixteen cocks were first fought in pairs, then the eight winners were fought in four pairs, next the four winners in two pairs, and finally the two winners fought for the main; so that the ultimate conqueror had to fight four consecutive battles. The "battle-royal" has become

almost a proverbial expression. In this mode of fighting each man tossed in his cock; there was a general fight, and the last living cock won all the money staked. In all regular mains, the nearest weights were matched together. There were other modes of fighting which we need not occupy space in describing.

The rules of cock-fighting we shall not give in detail. We have already said that in England the Westminster Rules are in force; in America there are various rules, such as the New York Rules, the Boston Union Club Rules, the Southern Rules, &c.; but fighting is more usually conducted under the New York Rules. These go more into detail, and in some respects differ considerably from the English Rules; the size of the pit, the position of the score-lines in centre of it, &c., being all laid down; but we need not state more than that at a revision of the New York Rules, made very recently (we believe in 1872), it was enacted that spurs should in future be uniformly one and a quarter inches in length. The effect of this provision, though apparently merciful to a thoughtless reader, is simply to prolong the battle by lessening the fatal character of the wounds, and thus really adds to the torture of the birds. We will only add that by *all* the rules we have seen, regular legal provision is made for birds being struck blind; and what is to be done in such cases is clearly laid down. Cocks, also, which have lost one eye in *previous* fighting (usually termed "blinkers") are provided for, and allowed certain advantages, which are supposed to counterbalance the defect in sight.

That any author should openly apologise for cock-fighting in these days—at all events, in England—may appear strange; but Mr. Tegetmeier, in the second edition of his work on Poultry, just published, if he does not actually do so, comes so very near it that any distinction is difficult to perceive. We quote his argument in full, because it is that almost always urged in favour of the "sport," because of the position of the author, and because we have never seen hitherto any serious attempt to answer it:—

"Cock-fighting has been an institution that has been viewed with favour by a very large portion of the human race from time immemorial. At the present period its practice in Great Britain is illegal; although on what ground other and far crueller sport should be allowed and positively encouraged by all ranks from the prince to the peasant, and this suppressed, it would puzzle a casuist to explain.

"In all animals that associate together in flocks or herds consisting of one male and several females, the males are provided with horns, spurs, or some other deadly weapons, by which the strongest male destroys or drives away the weaker, and so perpetuates the most vigorous and perfect race. These animals are all endowed with a great amount of combativeness and courage, and fight, whenever they come in contact with one another, with an instinct implanted in them by a higher than human intelligence.

"It is frequently alleged against cock-fighters that they supplant the natural spurs by others of steel or silver. It should be remembered, however, that these, being more efficacious even than the natural weapons, render the combats only less prolonged. To any one who will view the question apart from prejudice, or the maudlin sentimentality that is current at the present time, it must be obvious that a far greater amount of cruelty is evidenced in the setting a pack of hounds to pursue a fox for hours together, till the wretched animal sinks exhausted, and is, whilst still living, torn limb from limb—we beg pardon, "broken up" is the delicate expression by which this dismemberment is described. But, say the advocates of the chase, that sport is redeemed by the manly courage exercised by the hare and fox-hunter; as though his risking his own neck could lessen one iota the suffering of the animal he is pursuing.

"Cocks fight willingly; the hunted hare, the fox, the deer, the salmon struggling for hours on the hook, the vermin pining for days in a steel trap in order that the animals he naturally preys upon may be reared for sport, are all the unwilling victims of the superior force or intellect of man. Doubtless, however, such views as we have expressed will be, with many persons, unpopular at the present day—each individual, as Butler writes, compounds for cruelties

"'He is inclined to,
By damning those he has no mind to.'

Reminding one of the lines of Somerville, the author of the poem of "The Chase," who, being an advocate for hunting hares with harriers, writes:—

"'Nor the timorous hare
O'ermatch'd destroy, but leave that vile offence
To the mean, murd'rous, *coursing* crew, intent
On blood and spoil. Oh, blast their hopes, just Heaven!
And all their painful drudgeries repay
With disappointment and severe remorse.'

"'*The Chase*,' *Book I.*

"Let us not be misunderstood, we are not advocating the practice of cock-fighting, but merely denouncing the inconsistency of those who indulge in other sports attended with a far greater amount of suffering, and who regard themselves as severely virtuous because they denounce this one. We never fought a cock, or bred one for fighting; that we have witnessed cock-fights we do not deny, and as our readers may like to read a description of a combat, we reproduce the following account of one witnessed by ourselves some few years since." [Here follows a long description.]

"I dare say you will tell me that I ought to be ashamed of myself for going to such a demoralising and brutalising spectacle; but I think that there is something to be said for everything in this world, even for cock-fighting.

"On the general principle of common sense, let me ask you, who are in the habit of eating veal that is half an hour in the process of slow killing, and of enjoying your hunted hare that has for fifty minutes been in an agony of mortal fear, until at last, exhausted and shrieking, with every fibre in its body quivering with intense excitement, and every air-cell in its lungs filled with blood and lymph, it sinks and receives a death-bite from hounds more merciful than their masters—are you, I ask, the man to rail against allowing two gallant and noble animals to follow an impulse that has been implanted in them for a wise purpose, that you are too short-sighted or wilfully obtuse to see? The natural instinct of gregarious animals is to fight, so that the stronger males should destroy the weaker and perpetuate the noblest race; all, consequently, are provided (by Nature—ay, there's the rub) with lethal weapons for this purpose.

"As I once heard asked, suppose you were to inquire of a Game cock, whether he would rather have his cervical vertebræ dislocated by the hand of Betty the poultry-maid, or take his chance of life in mortal combat with his gallant antagonist in the next farm-yard, can you doubt his answer?'

We shall attempt to point out the real character and tendency of cock-fighting. We have not echoed *some* of the charges that have been brought against it; we have, in particular, admitted that artificial weapons, so far from adding to the cruelty of it, really lessen the amount of suffering; but, on the other hand, the really *worst* features of this "sport" we have never yet seen explained. It may be urged, and truly so, that other sports are cruel; and we have little respect for the man who, after declaiming against cock-fighting, will go down to his "gun-club" to maim and

torture poor defenceless pigeons by the dozen—nay, so far as cruelty goes, he is the *most* cruel; for the Game cock at least fights on equal terms, while the pigeon has little chance against the central-fire breech-loader of our aristocratic "sportsman." It is true, too, that cocks will fight; and that if, as is ingeniously urged by the apologist, our cock could be *asked* whether he would prefer to have his neck wrung by Betty the cook, or to "fight for his life," he would probably choose the latter. But both these comparisons involve fallacies which need to be exposed.

As regards the natural propensity of cocks to fighting, and the place of this instinct in the economy of nature, the argument drawn hence is really irrelevant, and cannot be urged without either some want of knowledge or want of candour. It is forgotten that the propensity, as it exists in the Game fowl, *is an artificial creation of man, and is not found naturally in any part of the world.* Cocks will fight, indeed; but very rarely will any individual but a Game cock fight to the death. The propensity in him, and every faculty that can minister to it, has been assiduously cultivated and artificially increased age after age, till a bird has been produced which literally *cannot* yield; but no such bird exists in nature. There is a contest, in which one may occasionally be killed; but as a rule the beaten bird yields, and departs to seek another harem elsewhere, or to thrash and dispossess a still weaker rival if he can find one. Cocks are not habitually killing each other in the jungle, as this argument would imply; and the Game fowl has been literally and really created by man himself *for* fighting as the end of his existence. In some birds, in fact, the unnatural propensity is developed to such an intensity that they are perfectly ungovernable, and actually useless even for the pit from very excess of it, turning savagely upon the "setter's" hands, or whatever else is nearest to them, instead of reserving their attack for the opposing bird. The few cases recorded in the newspapers from time to time (amounting, we believe, to some half a dozen in the last thirty years), in which children have been attacked and dangerously injured—in at least two cases even *killed*—by Game cocks, have probably arisen with birds of this unnaturally savage type, and will show the artificial character of the propensity thus intensified by the art of man. This being understood, the whole argument hence drawn can be properly appreciated; and it may well be asked whether the creation—for such it really is—of such an unnatural disposition in any of God's creatures, is not of itself about as strong an argument against a practice as could well be urged.

With reference to the actual suffering inflicted by cock-fighting, it may not be so great as some accounts might lead a reader to suppose; but, on the other hand, it is far more than cock-fighters usually admit. In Dr. Cooper's work on the Game fowl, to which we have before alluded, is quoted at length, with high commendation, an account of the "Great New York Main against the Daffodil Cocking Club of Portchester," won by the "Daffodils," with birds of his own favourite "Tartar" strain. The main consisted of seven battles, which were won respectively as follows:—First, eight minutes; second, forty minutes; third, thirty minutes (drawn); time of fourth and fifth not stated; sixth, forty-three minutes; seventh, thirty-three minutes. In spite, therefore, of the deadly weapons with which they were armed, nearly all these birds suffered far more than the "very few minutes" carelessly spoken of by various apologists. Of the nature of that suffering, we find it rather difficult to give a good idea without actually quoting the account of the battles: but we may state that one poor bird fought on with a broken wing for *forty minutes;* while in another battle "an unlucky *coup* blinded" the Daffodil cock, which nevertheless kept on, till at last he managed to get hold of the other, and "finished" him. This bird is accordingly compared enthusiastically with the "Old Jacksons," of which the almost incredible explanatory remark is made that this strain "had the reputation of *fighting better after losing their eyesight!*" In the account to which we have already made a passing allusion, of a

main at New Jersey so late as January, 1873, it is stated that ten battles were fought, and in four of these blinding occurred, such expressions as "New York had both eyes torn out" being employed to describe this result. Further details would but sicken the reader; and we will only add of this main that, while some of the battles were very quickly over, we find also the time of twenty-three minutes, twelve minutes, thirty-two minutes, twenty-eight minutes, and fourteen minutes recorded.

It is no part of our purpose to estimate the greater or less amount of suffering involved in all this; and no doubt other sports cause as great or greater to individual animals. For the pigeon-shooter who sneers at the brutality of the cocker we have already expressed our contempt; and even the angler, who "plays" his salmon for hours, or the man who hunts a poor hare till its little lungs burst with the violence of its agonised exertions, will do well to hold his peace upon the subject. But hardly caring even to mention the obvious truth that no cruelty to one dumb animal can either palliate or alleviate cruelty to others, what we desire to point out clearly—because hitherto we have never seen the distinction recognised—is that even the worst of these sports stands on a radically different footing to that now being considered. The cruelty involved in them is a cruelty of *thoughtlessness*. The sportsman gives pain for which his own diversion may one day be held to be no excuse; but this pain in no degree enters into or forms part of his pleasure; he simply *forgets* and overlooks it. His attention is fixed upon the correctness of his aim, or the skilful "landing" of his fish, or is absorbed in the excitement of his "glorious run" across the country; it is not directed to and fixed upon the actual sufferings of his victim. But in cock-fighting it is otherwise. The poor birds are there before all eyes, and every stroke is eagerly canvassed, "telling" directly in the shape of changes in the betting, as shown in any account of a match. If the suffering is forgotten, it is not in this case, as in the others, for want of *seeing* it; but because the excitement of gambling destroys for the moment, or permanently, all other feelings. Hence, while many who eagerly follow sport of other kinds are men of the highest character, and often really humane in other things, such are rarely found amongst cock-fighters. We shall risk what ridicule may attack us for saying that such *do* exist, for we have known them and met them; but they are diminishing year by year, and candour compels us to state that, as a rule, cock-fighters are a "bad lot." Again we admit there are exceptions, who apparently keep up the sport from a personal pride in the prowess of their birds; but generally cock-fighting, for the reasons we have pointed out, steadily brutalises those who take part in it, and causes ultimately a disregard of animal suffering in some individuals almost beyond belief. Only the other day an earnest American champion of the diversion boasted that he could take one of his cocks and cut off both legs and wings, *and the bird would fight then!* and in certain quarters of England the shocking tale is still whispered about of how the wicked Ardesoif, being angered by a bird on which he had betted heavily turning tail at the last, after winning many battles, tied the recreant cock to a spit,*

* Several accounts were published of the circumstances attending this horrid piece of cruelty; but the only one we can find room for is the bare statement of the facts contained in the obituary of the *Gentleman's Magazine* for April, 1789, and quoted by Cowper in a note to some verses (of no particular merit) founded upon the incident. "Mr A. [John Ardesoif, Esq., of Tottenham] was very fond of cock-fighting, and had a favourite cock, upon which he had won many profitable matches. The last bet he laid upon this cock he lost, which so enraged him that he had the bird tied to a spit and roasted alive before a large fire. The screams of the miserable animal were so affecting, that some gentlemen who were present attempted to interfere; which so enraged Mr. A. that he seized a poker, and, with the most furious vehemence, declared that he would kill the first man who interposed; but in the midst of his passionate asseverations he fell down dead upon the spot." Such a crime, followed so swiftly by such an awful judgment, could not fail to produce a most profound impression; and there is not the slightest doubt that it did much to awaken public attention to the cruelty of cock-fighting, and produce an opinion against it which ultimately became strong enough to put at least all open practice of it entirely down.

and deliberately *roasted him alive;* refusing, with deep and bitter curses, the entreaties which the poor bird's horrid screams forced even his fellow-sportsmen to urge for a merciful death. These things are not accidents, but the natural outcome of a sport of whose very essence it is—while *fastening attention* constantly and actually upon animal suffering—to stifle all feelings of pity by the excitement of a feverish contest, or of heavy betting upon the result of it. Hence, it is not only a question as to the amount of actual suffering involved, but the fact has to be considered that in this case that suffering is ever appealing directly to the eye and mind of the "sportsman," and has to be by him deliberately disregarded. The results, in their legitimate development, we have seen, and could readily add other instances of, but it is needless; neither do we care to dwell on proofs of a debased moral sense in other respects often found amongst cock-fighters, further than to give as an instance of what we mean, the fact that it is common in individual matches for each setter to *smell and taste* the hackles of his opponent's bird, carefully look under the wing, &c., lest perchance some powder to blind or stupefy his own bird should have been dusted amongst the plumage. Surely the considerations we have already urged need no addition to make any honourable man or real lover of fowls pause, before he again lends the sanction even of his presence to a pursuit whose character and tendency we have thus briefly endeavoured to describe. To have said even so much, or to have argued seriously against cock-fighting at all, will by many be thought needless, considering how *tabooed* it is already as a general diversion; it may seem like killing again the already slain, and were this a work of mere general interest it would truly be so. But as it is amongst Game and other poultry-fanciers that most of those who still "on the sly" fight cocks are found, and our work appeals more especially to such, we have thought it well to say this much concerning a pastime which was once so truly national as to find a prominent place in "Hoyle's Games," and is still followed in secret to an extent that many people would, even if they were told, refuse to believe.

It will not be necessary to add much respecting the general qualities of the Game fowl; though much might be said respecting the prowess of the Game cock, his powers of endurance, or his courage in defending his wives and family. Thus a cock bred in 1814, by J. H. Hunt, Esq., of Compton Pauncefoot, Somerset, seeing a hen and her brood attacked by a fox, which actually seized and was carrying off the hen, flew at the fox and killed it, of which occurrence a plate was published at the time. Another cock is recorded to have killed a large mastiff; and had we space we could multiply such stories almost *ad infinitum*.

The quarrelsome disposition of true-bred Game fowls makes this breed altogether unadapted to the purposes of the ordinary poultry-keeper. The young cock chickens have been known to fight for two whole days consecutively, only leaving off with daylight, and resuming hostilities as soon as there was a glimmer to see by; and this disposition is sadly in the way of many who would otherwise be glad to keep them. Their light and active grace, the singular beauty of colour, their free step and undaunted spirit, always secure admirers; and at most poultry-shows the Game classes are the most thronged of any. Many of the hens are excellent layers, averaging as high as 200 eggs per annum on a good range; but other varieties fall far short of this. All Game fowls, however, if killed moderately young, are the choicest eating possible. They will not bear fattening; but if taken up just as they are, after good feeding, are almost like the pheasant in quality of flesh. Merely as a table fowl, the larger strains of hen-feathered Game would be preferable, as cocks may easily be bred reaching nearly eight pounds, and by breeding young birds together the highest quality of meat may be obtained; but the want of the sweeping sickles sadly detracts from their beauty in most eyes. All Game fowls are very deceiving as to the weight of meat they carry. Compared with most other poultry they look small; but on taking

them up it is found that they are larger than they look, and that they feel almost "like lead" in the hand. When, therefore, they can be allowed free range round the country house, with space sufficient to prevent much fighting, they are sometimes an advantageous breed to keep, though, as a rule, more adapted to the purposes of the genuine fancier or exhibitor. By these they will always be prized; though there is no doubt the great improvement during late years in the quality of their chief rivals, the Game Bantams, has to some degree thinned the ranks of breeders of the true Game.

Game chickens are certainly very tiresome to manage. The quarrelsome disposition shows itself at a very early age; and we have known a bird fight till its windpipe was torn open, long before it was fully fledged. Even the little pullets will often fight freely, but *their* quarrels rarely produce much harm. As they will generally live peaceably enough after the mastery is once *thoroughly* decided, many breeders get over the difficulty by buffeting with a bag or handkerchief what seem to be the weaker birds, thus hastening the victory of the stronger ones; after which, for a time at least, the trouble is over. Temporary separation is not of the slightest use, only making the fighting worse than ever when the little sinners are allowed to meet again; once the quarrelling begins, it *must* be decided before peace can be re-established. Later on, when the chicks are old enough to be separated and live apart from the hen, there is much less difficulty; as the cockerels may be put up together with a strong old cock, who will keep order. It is very strange that this should be the case with so combative a breed; but it has been proved again and again that a good old Game cock *will not allow* young ones to fight in his presence, but will walk up and stop them, administering severe punishment if his commands be disregarded. In this way the walk may be preserved in peace for a considerable time, so long as any sight of hen or pullet be sedulously guarded against: but *this* event is invariably followed by an obstinate fight, in which most of the birds will be killed; and harmony can never afterwards be re-established. It is also necessary to separate each stag as he is dubbed; otherwise he is always attacked, his companions not appearing to recognise him when shorn of the appendages thus removed.

With regard to the general breeding of Game, we need only remark upon the eccentricity of colour in breeding, especially in Brown-reds. Mr. Douglas's notes have made this very evident, and it is equally evident that the crossing of differently-coloured strains is the root of the mischief; experience has also proved that all the standard colours can be bred true with patience and care—except, perhaps, the Yellow Duckwings, and even this might probably be bred true in time. With regard to Brown-reds, our conviction is that the difficulty will disappear simultaneously with the *entire* suppression or disuse of cock-fighting, having a strong opinion that the different shades would not be so crossed, to the detriment of all certainty of colour, were it not that the "pit" consumes so many of the badly-coloured birds thus produced, which otherwise would be valueless. Even of late years we think there has been a much greater tendency to uniformity of colour; and, as the breed comes more and more entirely into the hands of genuine "fanciers," the evil will, we have little doubt, wholly disappear.

So with regard to the differences in "style" between the modern exhibition type and the old fighting birds. These differences have already been alluded to, and are not only very perceptible, but have occasioned warm discussions in the various poultry journals; the assertion being freely made that modern birds are not "Game," and are to "the true Game fancier" inferior in every way to the old. Mr. Douglas has already dealt with this matter, and we only mention it again for the sake of pointing out that our judgment of it must obviously depend upon the answer given to the question—Do any of us really *want* to bring back the old cock-fighting days? If we do not—if

the Game fowl is to be bred henceforth for the exhibition pen instead of for the pit—then, by the inexorable laws of Nature, it is absolutely inevitable that, slowly and imperceptibly, some change should be effected, and that considerations of grace and beauty will by degrees modify merely gladiatorial qualities. This is what is being done, and except when we see a Malay cross, we confess our own approval goes strongly in favour of the modern style of bird.

A word may be said, in conclusion, as to the number of hens allowed by Mr. Douglas to one cock. It is quite certain that amongst the old cock-fighters it was an accepted rule not to place more than three or four hens with one cock, and they always considered that, for *their* special purposes, a greater number led to deterioration; and in those days such anxious attention was bestowed on every detail, that some may be slow to accept so total a reversal of all their ideas. Much must depend upon the birds, and much upon the range; for it is a well-proved fact that with unlimited range double the number of hens may be allowed, with even *more* vigour than the smaller number in a close yard. Different stock-birds, also, differ totally in their vigour and disposition; and we have not the slightest doubt that in many cases the produce has been actually weakened, and hens even rendered entirely barren, by want of sufficient mates for a very lively bird; while on the other hand our own experience has certainly not taught us to expect much size and vigour, or even fertility, from large fowls (in our case Brahmas) when mated with more than from four to eight hens. Mr. Douglas would not utter such an opinion unadvisedly, however; and all we can say is, that soil, food, range, individual character, and age of the bird, with other circumstances, should be carefully weighed, and the result of experience noted in different cases, before the breeder proceeds to form *any* rule for his own guidance.

JUDGING GAME.—"In judging Game," says Mr. Douglas, "activity and liveliness are taken into consideration, as well as condition and other points. It is very seldom, however, that first impressions are wrong, unless competition is very close. I know the public often wonder how the birds were judged, and I must say often not without cause; but then it must be remembered that the judges see the birds privately and while quiet, and that many are 'made up,' as I have already observed, just to stand the test of passing the judge on the required day, and after that they are out of form. In Game it is generally needful really to put the 'points' together; and hens and cocks should be judged by the same scale."

We may add that in judging Game it is needful to be watchful against evident traces of the Malay cross. Without going into the question of whether such a cross may or may not in certain cases improve a strain, there can be no doubt that if it be employed, it should be entirely "bred out" again before showing, and that no bird showing plain *signs* of it has any right to take a prize as true Game. That cross-bred birds exist, almost any class at a good show will testify for itself; but, at the same time, we must say that in our own opinion its prevalence has been greatly exaggerated, especially by those who can admire nothing but the old, fighting, "cart-horse" style of bird. A real Malay cross can generally be detected by the head being too broad, with rather heavy eyebrows, or the neck being too long, or, failing these, by a sort of undefined stiffness or awkwardness of gait, which is as distinct from the elastic tread of the Game as can well be. If a bird shows none of these faults, to assert that he is "half-bred Malay" is mere reckless jealousy.

The descriptions of the different varieties of Game given in the "Standard of Excellence" are, on the whole, pretty fairly accurate, but the scale of points is most absurd; all the points, with one exception, being given exactly equal values. Some decided errors also need pointing out even in the descriptions. The colour of the Black-red cock is described considerably too dark, the head being called rich dark-red, and hackles and saddle rich red—in fact, just like the inferior colours

described by Mr. Douglas, and which would never win against symmetrical birds of the bright orange-red so eagerly sought by fanciers. The eyes, again, are termed "bright, clear, deep bay;" whereas they should be bright-red, as acknowledged by all modern breeders. In Brown-red cocks, also, the description is much too dark, and on the breast entirely different from the type of bird generally shown. The hackle and saddle are described as "dark red," with shaft of feather black, whereas a rich bright orange-red is the correct colour, with as little black as possible; and the breast is termed "reddish brown, streaked with black," without any mention of the laced colour, which is now most generally shown and preferred by breeders. The neck of the Brown-red hen is also given as "coppery yellow," instead of light yellow or lemon. The back of the Yellow Duckwing cock, as described by Mr. Tegetmeier, would also be considered too dark by most fanciers. Again, good Game breeders will not allow the hackle of a Pile cock to be white in the centre of the feathers, which gives a wretched mealy appearance, very unpleasant to the eye; the feathers should be clear red, or rich bright orange-red, as in the brightest type of Black-red Game. The latter breed is, in fact, the proper type of the true Pile, only putting white where the Black-red is black, the other colours remaining the same, though marbling on the white may be permitted: and this general remark brings us to the last error in the "Standard" which requires notice, and which is so exactly and pointedly contrary to the truth as to be almost ludicrous. We refer to the colour of the Pile cock's wing, the secondaries of which are, in the most unaccountable manner, described by the "Standard" (the American following the English) as "white on the *outside* web, red on the *inside* web, with a rich *red* spot on the end of each feather." The effect of this would of course be that the lower corner of the wing when closed would appear white, with a red upper edge: whereas the secondaries really are red on the outside edge, white on the inside, with a *white* spot on the end of each feather, making the corner of the wing red or chestnut with a *white* upper edge, or strictly according to the rule of maintaining—with the substitution of white for black—the general colour of Black-red Game.

The Scale of Points in the American "Standard" is equally absurd with the English, all the points but one being allotted precisely equal values. It is understood that this scale was adopted solely on the authority of *one* American breeder: and the result may show the folly of any individual or individuals settling at a table what they think *ought* to be the values of the points; the scale in question being openly ignored by nearly all other fanciers, in spite of the added authority of the English work, from which it is literally copied, except that the solitary point whose value differs from the rest is otherwise selected in the American scale.

The scale which has been furnished us by Mr. Douglas has long been used by him in judging. By comparison it will be seen how very closely it agrees with our own; indeed, the differences observable are traceable almost entirely to the desire to arrange values in even "fives," and to bring the whole within 100 points in the total. It is as follows:—

MR. DOUGLAS'S SCALE OF POINTS.

General Symmetry	20
Colour	15
Handling (*i.e.*, Hardness and Condition)	15
Head	10
Eyes	10
Neck	5
Tail	10
Legs	5
Feet	10
	100

In our own descriptions we have had the assistance in revision both of Mr. Douglas and another eminent Game judge, and they may be relied upon as representing the birds as now demanded for the show-pen. Since the decline of cock-fighting, some of the sub-colours have so nearly gone out, and can so seldom be shown with any chance of success, that we shall only describe the standard colours, with the addition of a few from the American "Standard;" leaving the descriptions of Mr. Douglas in the text to answer for the remainder. Should any of these ever be exalted to exhibition rank—and there have been some signs lately of an attempt to revive the Blue Dun, a most magnificent fowl—fanciers would speedily frame standards of feather far more precise than any which could be given now, and any minute description would, therefore, not only be at present useless, but whenever it became of any use, almost certainly erroneous.

SCHEDULE FOR JUDGING GAME.

GENERAL CHARACTERISTICS OF COCK.—*Head and Neck*—General appearance of head rather long, thin, and keen; beak strong, slightly curved, and stout where set on; whole face smooth and fine in texture, including deaf-ears and throat. [In undubbed birds the combs should be upright, thin, straight, and evenly serrated; deaf-ears and wattles also very thin, red, and smooth in texture.] Eyebrows free from "lowering" expression, which denotes Malay blood. Neck somewhat long and slightly arched; hackle short, so as just to reach between the shoulders, but not to flow over the back. *Body*—General shape rather slight, largest at shoulders, and tapering to the tail somewhat like the shape of a fir-cone; back flat, widest at shoulders, and tapering towards saddle, and somewhat slanting; breast hard and full, but not deep or turkey-breasted; saddle narrow, the feathers short and scanty; wings powerful and of moderate length; the points nicely carried under the saddle-feathers. *Legs and Feet*—Thighs rather long, but well carried *along* the body, not perpendicularly, or so as to appear long, very round and hard; shanks in just proportion, with smooth handsome scales, the spurs set on rather low; toes long, straight, and thin, with well-shaped nails, and the back toe low and nearly flat on the ground. *Tail*—A nice medium length, neither too close nor too spread, but only moderately raised, and each sickle-feather as nearly as possible just clearing the next one and no more; the sickles and whole plumage sound, hard, and glossy. *Size*—Rather small, ranging from four pounds and a half to six pounds. *General Appearance*—Rather slim, but showing much agility, strength, "elasticity," and vigour, with great hardness of flesh and plumage. *Carriage*—Very upright, alert, and courageous.

GENERAL CHARACTERISTICS OF HEN.—In all respects similar to those of the cock, except that the tail is carried not much above the horizontal line, and her comb should be thin, upright, quite straight, and neatly serrated. *Size*—Rather small, averaging about four pounds and a half. *General Appearance*—Very neat and trim. *Carriage*—Alert, quick, and active.

COLOUR OF BLACK-RED GAME.—*In both Sexes*—Beak yellow, or horn-colour; whole face, including comb and deaf-ear, brilliant scarlet-red. Eyes brilliant red. Shanks, willow or olive preferable, but yellow and white permissible [blue legs rarely now win anywhere]. *Colour of Cock*—Head and hackle bright orange-red. Back, shoulder-coverts, and wing-bow rich violet-red shaded with orange. Wing-coverts rich green-black, forming a bar across the wing. Secondaries rich bay on outer web, which is all that appears when wing is closed; black on inner web, with a black end to each feather, forming a black edge to corner of the wing. Primaries black, with a bay edge on outside web. Saddle, bright orange-red. Breast and under parts rich deep black, of a blueish shade. Tail black, glossed with green or purple. Darker colours than the above are permissible, but inferior in both beauty and exhibition value. *Colour of Hen*—Hackle rich golden yellow, striped with black. Breast a salmon red at the throat, running into ashy colour towards the thighs, which are a brownish ash-colour. Rest of the plumage a rich brown partridge marking, which should on no account run into distinct stripes or pencilling, except on the larger tail-feathers, in which some approach to bars is generally perceptible.

COLOUR OF BROWN-RED GAME.—*In both Sexes*—Beak nearly or quite black. Face and head a deep rich purple-red, or even almost a purple black [there are judges who prefer each]. Eyes a very dark brown or black. Legs dark or willow. *Colour of Cock*—Head and hackles orange red, with a faint trace of streak in the feathers. Back and shoulders dark crimson; saddle-feathers rather lighter than the hackle, shading off at sides into dark lemon, with a rich stripe in each feather. Wing-coverts glossy black; primaries and secondaries a more smoky colour. Breast-feathers almost black, laced with bay, with a little streak in centre of each feather. Tail black, the sickles richly glossed. Thighs and all under parts black. [Other shades are permissible; the hackle may vary to bright orange, and the dark crimson to rich crimson, &c.; but these varieties are not reducible to standards.] *Colour of Hen*—Hackle rich deep gold, rich gold, or bright lemon striped with black. Rest of body brilliant black, dusky black, or very deep brown, all being admissible; but the brilliant black-bodied hens should go with the laced-breasted and brightest coloured cocks to look well.

In Ginger-breasted Brown-reds some latitude is allowed, and also in other sub-varieties of the Brown-reds. In all these, what is chiefly looked for is a general *harmony* of colour, with signs of careful breeding, combined with symmetry and hardness of flesh and feather.

COLOUR OF YELLOW DUCKWING GAME.—*In both Sexes*—Head, face, &c., brilliant scarlet-red. Eyes bright red. Legs willow or yellow, willow preferable. *Colour of Cock*—Hackle a light straw yellow or yellowish white. Back, shoulder-coverts, and wing-bow a bright brassy maroon. Wing-coverts a bright steel-blue, forming a bar across the wing as usual; secondaries white on under web and black on inner web, with a black end, appearing white with a black upper edge at corner when wing is closed; primaries black, with a white edging on outer web. Back a maroon straw or claret, the saddle shading off to straw a shade darker than the hackle. Shoulder-butts, breast, and under parts a deep black. Tail black, the sickles richly glossed. *Colour of Hen*—Head grey. Hackle silvery-grey, striped with black. Breast a bright salmon-red, verging to fawn-colour, shading off on lower parts to ashy grey. Back, wings, sides, and saddle a silver grey, covered with a small wavy marking of darker grey, not running, however, into distinct bars or pencilling, and showing shaft of feather white; to be quite free from any red or brown tinge. Tail a darker grey, almost black.

COLOUR OF SILVER-GREY DUCKWING GAME.—*In both Sexes*.—Face, comb (of hen), &c., as in the Yellow Duckwing. Legs dark willow, or black. *Colour of Cock*—Head and hackle silvery white, free both from straw shade or dark streak. Back, shoulder-coverts, and wing-bow silvery white. Shoulder-butts a blueish-black. Wing-coverts or bar a brilliant blue; and secondaries a pure white on outer web, black on inner web, a spot of blue-black on end of each feather, giving a black upper edge to the lower corner when wing is closed. Saddle-feathers silvery white, as the hackle. Breast a deep blue-black, and all under parts black. Tail black, with all the sickles very brilliantly glossed. *Colour of Hen*—Hackle silver, heavily striped with black. Breast-feathers a smoky grey, nearly black, laced round the edge with dull white, the shaft of feather showing white. Rest of body a smoky black, very faintly edged with dull grey or white, the shaft of feather showing slightly, giving the whole a very dark smoky grey appearance. Tail dark grey and black, with a strong smoky tinge.

[Some judges consider that the hen to show with the Silver-grey cock should be like the Yellow Duckwing hen, but of a purer and bluer grey. Such cannot, however, be bred pure from this strain; and if shown, the purest-coloured Yellow Duckwing must be selected. It is probably this error which has nearly lost the breed; and if Silver-grey pens are ever shown again, the *pure-bred* Silver hen should alone be allowed to take prizes.]

COLOUR OF PILE GAME.—*In both Sexes*—Face, &c., brilliant scarlet-red. Legs yellow, willow, or white. Eyes bright red. *Colour of Cock*—Hackle orange-red or chestnut-red, free from white or mealiness. Back a deep chestnut-red. Shoulder-coverts and wing-bow chestnut-red or violet-red (the last, giving an agreeable variety, is much admired). Wing-coverts or bar, white, the feathers edged with chestnut; secondaries, chestnut or bay on outside or lower web, and white on the inner web, appearing bay when wing is closed; with a white spot on the end of each feather. Breast white, the upper part faintly laced with chestnut; all under parts white. Tail white, as free from black marking as possible. *Colour of Hen*—Hackle light chestnut, with a little white in centre of feathers. Breast chestnut in upper part, shading to nearly white on thighs. Rest of the body white, more or less marbled or laced with chestnut, some latitude being allowed. Tail white.

It will be seen that the colour of the cock is almost exactly that of the Black-red Game, substituting white for black. This is, indeed, considered the ideal of a true Pile; except that, instead of pure white on breast and wing-bar, a faint but precise marbling or lacing is considered a beauty.

COLOUR OF WHITE PILE GAME.—The Americans have another kind of Pile to which this name is given, the colour of which we take from their "Standard." *In both Sexes*—Face, comb (of hen), &c., rich bright red. Legs yellow or white. *Colour of Cock*—Hackle white, very slightly marked with light red. Wing-coverts a rich bright red, or orange and port-wine colour combined. Rest of plumage pure white. *Colour of Hen*—Breast a chestnut, distinctly defined; rest of plumage white. It will be seen that the colour on wing of the cock reverses that on the ordinary, or, as it is termed by Americans, "Red Pile;" the Pile having light bar on chestnut wings, while the White Pile has a red bar on white wings.

COLOUR OF WHITE GAME.—*In both Sexes*—Head, face, and comb (in hen), &c., brilliant scarlet-red. Eyes bright red. Legs yellow or white. Colour of plumage brilliant white all over. Beak to match the legs in colour.

COLOUR OF BLACK GAME.—*In both Sexes*—Face, head, comb (in hen), &c., coral-red. Eyes black, dark brown, or red. Beak black, or horn colour. Legs dark willow, or black. Colour all over a rich glossy black, free from golden, reddish, or smoky feathers.

Brassy-winged Game only differ from the above in a little dark lemon, brass, or copper-colour on the shoulders.

COLOUR OF SPANGLED GAME.—*In both Sexes*—Head, face, &c., rich bright red. Legs yellow, willow, or black. Colour of plumage may be either black, red, blue, or buff, spangled with white; the spangling to be as even as possible. Whatever the colour be, the tail of the cock is usually black and white.

COLOUR OF CUCKOO OR DOMINIQUE GAME.—*In both Sexes*—Head, face, &c., brilliant red. Beak yellow. Legs yellow. Eyes bright red. Colour of plumage light blueish grey, pencilled or barred, as in Pencilled Hamburghs, with darker blue-grey or slate-colour. The cock's hackle and saddle may be shaded with gold. This variety is scarce and of doubtful purity, the cock's sickles being generally much too long for true Game; and in America the cocks are frequently known to run when fought.

VALUE OF DEFECTS IN JUDGING.

Standard of Perfection.		*Defects to be Deducted.*	
A bird perfect in shape, style, colour, condition, and hardness of body and feather, to count in points	100	Bad head	10
		Too much hackle	7
		Tail too long, or spread	8
		Legs (not in proportion)	10
		Imperfect feet	12
		Eyes wrong colour	8
		Other faults in colour	15
		Want of symmetry	22
		,, ,, condition (as to appearance)	12
		,, ,, hardness (on handling)	12

DISQUALIFICATIONS.—Crooked backs, crooked breasts, duck-feet, or any other evident weakness or deformity. Colour of legs not matching in a pen. Any other than single combs. Adult cocks undubbed. Any fraudulent dyeing, dressing, or trimming, beyond the recognised dubbing and dressing of the head.

CHAPTER XXII.

DORKINGS.

EVEN the Game fowl can hardly be regarded as a more thoroughly English breed than the Dorking, though the latter was raised for far other objects, and to a far different standard of perfection. If the one has typified the national quality of hard fighting, the other may equally and fitly symbolise the decided *penchant* for "good living" which distinguishes John Bull all over the world. It has been well said of him, that he *can* fight on an empty stomach, but he much prefers to fill it first; and our Dorking is a contribution to the process which no one need despise. Before the poultry-fancy had been heard or thought of, the Dorking had been bred to a high standard of perfection, simply as a fowl for the table; and after all competitors have tried their best, even the vaunted French fowls have not displaced it, and it still remains—take it all in all—the favourite table breed of those best of all judges, the London poulterers.

As in the case of the Game fowl, it is very difficult to determine the origin of Dorkings; indeed, really to settle the point may safely be pronounced impossible. Conjectures, supported by more or less of probability, are all that can be offered; and we must say that of such probabilities almost all, in our opinion, point to the conclusion that much of the breed in question, at least, was introduced by the Romans. In the well-known passage, where the old writer Columella gives the then accepted ideas as to the "points" which should be sought in selecting stock, it is quite true that he differs seriously from the present Dorking, not only in colour, which he describes as "red," but also in comb, which he says should be both small and erect, differing thus from either type of comb which is now accepted. But he speaks so distinctly of the "square frame," large and broad breast, large head, and, above all, of the "five claws" which mark the Dorking more strongly than any other point, that these, in our opinion, far outweigh all minor differences, and prove that the breed now to be considered, in all its *main* essentials, was known ever so many centuries ago to the gourmands of the Roman world. That it should be an indigenous British fowl, when it was unlawful to eat fowl at all in Britain, is scarcely likely of so pre-eminently a table breed; and hence we come to the conclusion that the Dorking—as we know it now—is the more or less direct descendant of those birds which in old Columella's days were most prized by the poultry-keepers of Rome.

The intermediate stages of descent are of course impossible to determine; but it is certain that the Coloured or Grey Dorking of a quarter of a century since, just before the poultry mania burst upon the astonished public, was *not* the Dorking of the present day, which could not be called grey by any stretch of the imagination. But the Dorking of those days *was* grey, the plumage of the hens being of a very neat grey speckle, rarely seen now, occasionally running very nearly into that now called silver-grey by fanciers. The size was also smaller, and the shape of body somewhat shorter and more compact. The White Dorking with rose comb was also well known; and as this last always bred true, while the grey-speckled birds varied much in comb, and were very uncertain about the fifth claw, many people think that the genuine Dorking stock—

whatever that was—had been by this time chiefly merged into the White breed, while the Coloured variety had retained it in less degree, or had perhaps been even formed by crossing the White Dorking with those large speckled fowls which for many generations have been indigenous to the counties of Surrey and Sussex, being probably produced by the fine dry soil of that part of England more than by any special causes; though for years lately the demand for the London market has caused them to be largely cultivated, with peculiar care, and on a scale which brings in yearly no small share of the income of those counties.

COLOURED DORKINGS.—The change from the old Speckled or *really* Grey Dorkings just described, to the larger and darker fowl now shown was undoubtedly effected by Mr. John Douglas, and by means of a cross. This cross has been often alluded to, but very vaguely, by previous writers on the Dorking fowl; some saying that the Cochin was employed, whilst recently the statement has been made that the alien stock used were Indian birds of the "Malayan" type. Mr. Douglas himself, however, must obviously be the very best authority upon this point, and has at our request kindly given the following interesting account of the process. We may add, that in seeking these details we were not only desirous of clearing up the matter as regards the Dorking fowl itself, but of publishing a valuable "lesson in crossing" for the benefit of breeders generally; this being a branch of the art which is as yet little cultivated, and by which we believe very valuable results might be secured.

"Dorkings, in 1857," says Mr. Douglas, "were considered of a good show weight if the cocks attained nine pounds and a half, and the hens seven pounds and a half. The hens were then either of a grey or brown ruddy colour, and the cocks always showed a great deal of white in the tail, with breasts inclined to be speckled of various colours; not any standard colour, as shown at the present day.

"The first and only time I made a cross was with a dark grey cock, which had come from India, weighing thirteen pounds. This bird was a model single-combed Dorking in all but the fifth toe, which was absent; and it is quite wrong to say he was of the Malayan type, for there was not the least type of Malay about him—he had white legs and all the characters of the Dorking, except, as before stated, the fifth toe. I firmly believe he must have been a cross from a bird of the Dorking tribe taken out before to India, with what cross I could not say, but certainly not the Malay. I put to this bird seven hens eighteen months old, and the produce turned out far beyond my expectations—all were decidedly of the Dorking type, and very few but what had the Dorking toe. Some of the pullets when seven months old weighed nine pounds, and cockerels ten pounds and a half; while at eighteen months several hens reached ten pounds and upwards, cocks coming up to thirteen pounds; and one bird in particular, when two years and six months old, weighed as much as fourteen pounds and a half, which was the heaviest weight I ever obtained in the Dorking fowl.

"So much for the first cross. The following season I mated one of the cockerels thus produced to thirteen of the old hens, and the imported cock to seven of his own cross-bred pullets. From the cockerel with the hens I chiefly obtained my uniformity of colour in the pullets, and also my very dark cockerels; but I also found I had obtained a much stronger constitution. From this year's breeding many yards obtained the new blood, both by eggs and birds bought of me; and from that date (1858) we began to find at our shows a steadily increasing number of the Dark Greys, and heavier weights began to be shown.

"After the second year I lost the imported cock, and had then to work with the two yards I had formed, but which I found no difficulty in doing. The stronger constitution thus introduced

MR JOHN MARTIN'S ROSE COMBED DORKING COCK
"CHAMPION"

continues to the present time, breeding also up to this very day far more uniformity in colour. Whole yards of Dorkings may now be found which run as true to colour as Brahmas or Cochins; whereas before this time almost every hen was different in colour, so much so that out of a hundred hens in a yard it was a difficult matter to get three out of the lot to match. We have also thus obtained longer bodies, greater width in shoulders, more length of breast, and greater depth in the keel or breast-bone, where a proportionately greater amount of flesh can of course be put upon the birds; in fact the fowl is now heavier-fleshed all over, with no more addition of offal in proportion. With regard to the improvement in constitution, young Dorkings previous to the cross could hardly be shown at more than two shows running, when they were either attacked with roup or became black about the head; often also becoming crop-bound, or dropping down with leg-weakness—in fact, had constitutions not at all adapted for show purposes. Now it is well known they will travel from show to show all the season through, equal to almost any other breed, while upon an average every first-class bird carries about three pounds more flesh than formerly."

We are not sure that the gain as regards constitution, referred to in the foregoing notes, is not somewhat exaggerated; as a reference to any old files of poultry papers will show that years ago *all* poultry sent to shows were far more subject to various diseases than now, owing chiefly to want of sound knowledge as to their proper treatment. "Exhibition fever" was in those days quite a common and well-understood term, and the majority of fowls suffered more or less from it. The gain in size is however beyond dispute; and that to a perceptible degree vigour has been likewise improved, must also be granted; for both of which fanciers have to thank the efforts of Mr. Douglas.

The following notes on Dorkings—their breeding, management, &c., have been furnished by Mr. John Martin, formerly poultry-breeder and manager to Viscountess Holmesdale, of Linton Park, Kent, whose constant succession of triumphs as a Dorking exhibitor is still well remembered by poultry-fanciers; and who, since her ladyship retired from "the fancy," has won, with the same stock, many prizes on his own account.

"In choosing my breeding-stock of Dorkings," says Mr. Martin, "I am always careful to select birds with good, *sound* feathers—that is, with feathers looking as though they had been glued down, and not such soft-feathered birds as we often see in all poultry, and perhaps oftener in this breed than any other. I choose birds possessing great length and depth of body, with good broad shoulders and backs; and especially I think it very important to get birds with great length of breast-bone—not a short breast-bone like Cochins and Brahmas. Short-breasted birds may look well in a pen to a novice, appearing round and plump; but they are not good Dorkings, and would be condemned by a judge who understands the breed.

"I like the head to be large, but not coarse, and I like also to see good large feet, with a fair but not excessive amount of bone. The fourth and fifth toes (that is, the back toes) should be low on the leg, and separate—not one toe growing out from the other—and it is best for the lowest of them to stand out straight, and not point to the ground; for when they do so one or both often get injured, and this mishap has not seldom prevented an otherwise good pen of birds from winning. But, above all, I would select birds of good constitution, and in the best of health; for if you breed from either weak or sickly stock, what can you expect but weakly chickens? I prefer breeding from adult birds, for I consider a bird at two years old is in its prime as regards strength and vigour, whereas one only a year old has not arrived at its best—at least, it is so in Dorkings. I always found, as a rule, that when I put a two-year old cock with pullets, the pullets preponderated, whereas a young cockerel mated with hens produced more cockerels;* but I prefer full-grown

* It will be seen that this corroborates our own opinion expressed on p. 133.

birds on *both* sides, and the best plan I know of is to select the breeding-stock, and put them on a good walk till they are nearly two years old, both cocks and hens to be of the same age. Then I can safely say you have the birds at their very best as regards all the objects of successful breeding.

"The colour of birds I prefer are those of dark feather, but to show a bright shaft nearly the whole length of feather. The male bird should be descended from the same coloured birds as the females, for if not no one can possibly tell what colour the chickens will turn out. I do not mean to say but what a first-rate strain put to an inferior will very much improve the inferior one; but then the next season you must cross back again only to the better one, and by this means you will improve; but if you select another cross again next year, it is probable you will be as far off your aim as ever. For my own part, I prefer to keep breeding from my own stock, and then I know what I am about; for I know, to my cost, the ill effects of crossing with birds from bad strains, even although they had every appearance of being good birds. In any case, the breeder should be careful to select birds only from stocks that have shown good points for years. While I was poultry-manager for Lady Holmesdale, at Linton Park, I once had the misfortune to purchase a first-class Spanish cock in every respect (as far as regards looks) for a breeding bird; but, to my disgust, there was not a single chick from him worth the food it had eaten, although the bird was mated with the very best hens I ever bred.* I once made the very same mistake in breeding Silver-pencilled Hamburghs; and he is a fortunate man who can breed first-class birds by picking up his stock anywhere, however good the birds may be. On the whole, I should persuade any one starting afresh to get at first all his birds from one strain, unless it is a class of birds that requires to be bred two ways, one for cockerels and the other for pullets; though I believe, with care and perseverance, all classes of birds might be bred from one stock. I have bred my Dorkings now for some years together without a cross, and the strain has shown no deterioration.

"I mate my breeding-stock about January, so that the birds may be well settled together; and if I get my first chickens out by the end of March, I find by the time the hen leaves them the weather is generally warm enough not to stop them from growing. I find seven or eight eggs plenty to put under a hen early in the season, and eleven is plenty at any time. I take great care to obtain really safe and good sitting hens; for there is many a guinea paid for eggs utterly thrown away through a bad sitter. I like to set my Dorking eggs if possible under Dorking hens, as it gives the hens a rest from laying; besides which, I do not like to have light-coloured birds running about with or near the breeding-stock, having every reason to think the very sight of them has a great effect upon the progeny. The sitting hens should be very clean, and free from vermin, which is one of the great secrets of successful poultry-rearing. It is impossible for a hen to sit well if she is tormented in this way, and the little chicks get infested with them and cannot thrive, sometimes dying off by whole broods. As a proof of this being the cause, Cochins or Brahmas rarely die off in this manner, because the young chicks have not feathers enough to harbour vermin. I have also been very often asked to call and see a lot of chickens that have been doing badly, though fed upon the best food money could buy; and on taking them up have generally found them covered with lice, which all quickly-feathering breeds are subject to. The best thing I know of in such a case is to mix a *very few* drops of carbolic acid with powdered brimstone, mixing or rubbing

* In Chapter XI., we have shown that the ill results here spoken of do not necessarily prove that the purchased bird was really of a "bad strain," but may have been produced solely by the sudden cross causing a tendency to revert to the older and less perfect form of face.

well together, and putting no more of the acid than will mix up dry with the brimstone—give them a few dustings of this, and you will not see any more of the little plagues for some time, while the chicks will recover as if by magic. I also find it a good plan to water the house all over with water in which a little of the acid has been mixed, which purifies it as well as destroys all insect life.

"I prefer to set my own hens out of doors, in the same covered coop I mean the bird with her chickens to occupy after hatching, and allow her to come off at pleasure. I do not believe in their needing to come off every day, as many people make a practice of taking them off—the food they eat lasts much longer than when they are taking plenty of exercise, and if Dorking hens at least be left to their own will, they will only come off once in two or three days. If you put a feeding-hopper, there will always be food ready for them. If the weather is very dry, do not forget to sprinkle the eggs a few times, and pour plenty of water round the nest when the hen is hatching. I never take the chickens away, not being partial to chickens roasted on the hob or before the fire at that tender age. As soon, however, as all the chickens are out of the shell and are quite dry, they should be put into a clean nest, though this is still better done the day before hatching; but they are *better* for not being fed till twenty-four hours old.

"As regards chopped egg, spice, and similar things—not for *my* chickens! I have left them all off for many years. I get the best oatmeal and the best sharps, and mix together until it will break up almost like bread. I feed them upon this, with a few groats about twice a day, while they are small. As they get larger give them a little of the *best* wheat instead of groats; but I never pamper them in any way with dainties, but bring them up on good sound meal and grain. I must say a little hempseed and buckwheat ground up with the meal and added at times is very beneficial; but after all possible niceties have been got for them, I never find them do so well as on good plain meal and grain. I feed them all through life as above, with a little barley and Indian corn at times, and I find they will grow upon it to large-framed birds, never get too fat, and will stand showing well—quite as well as other people's birds.

"My experience as regards perches is just the contrary to what I generally see stated, and I much prefer to have them so small that the birds can easily grasp them with their feet. I never found that wild pheasants chose the largest limbs of trees to roost on, as I have seen remarked, but just the reverse; and I remember well one case of my own, when I had a fine lot of Dorking pullets, which had grown up on my ordinary perches with breasts perfectly straight. Seeing so much in a poultry paper about broad perches, I thought I would change them, which I did; but on feeling them again a month or two after I was disgusted to find they had all gone crooked, and I have never used large perches since.*

"I will only add that overcrowding is a very frequent cause of chickens not turning out well, and Dorkings suffer from it more than most breeds, especially when about two or three months old. If you wish to succeed at exhibitions, do not spare the knife when you see one that certainly will not make a prize bird; for by keeping it the chick not only 'eats its head off,' but is taking up the room a better bird should have, and actually helping to spoil that also."

Both rose and single combs may be shown in Coloured Dorkings, but of course all the

* Our own experience has certainly been different from this, as we found on changing from small perches to larger a decided change for the better. There is, however, probably a "happy medium;" and the shape of the fowl's foot should also be studied.

birds in any pen must match. The two strains have been so inter-bred, that often both rose and single combs have been known to proceed from the very same parents; but it is in the power of any breeder very speedily to correct this irregularity, and fix either feature in his own strain. The rose-combed birds have a great tendency to become very coarse about the head in their second year, which detracts greatly from their good looks as exhibition birds; this, too, however, may be eradicated by careful attention to fine "quality" of head and face, and we have seen several very "old stagers" which, after several years of successful competition, still looked high-bred and aristocratic fowls.

The general points to be sought in breeding stock have been well described by Mr. Martin. We append in Fig. 74 a representation of the dark plumage he alludes to as preferred by himself

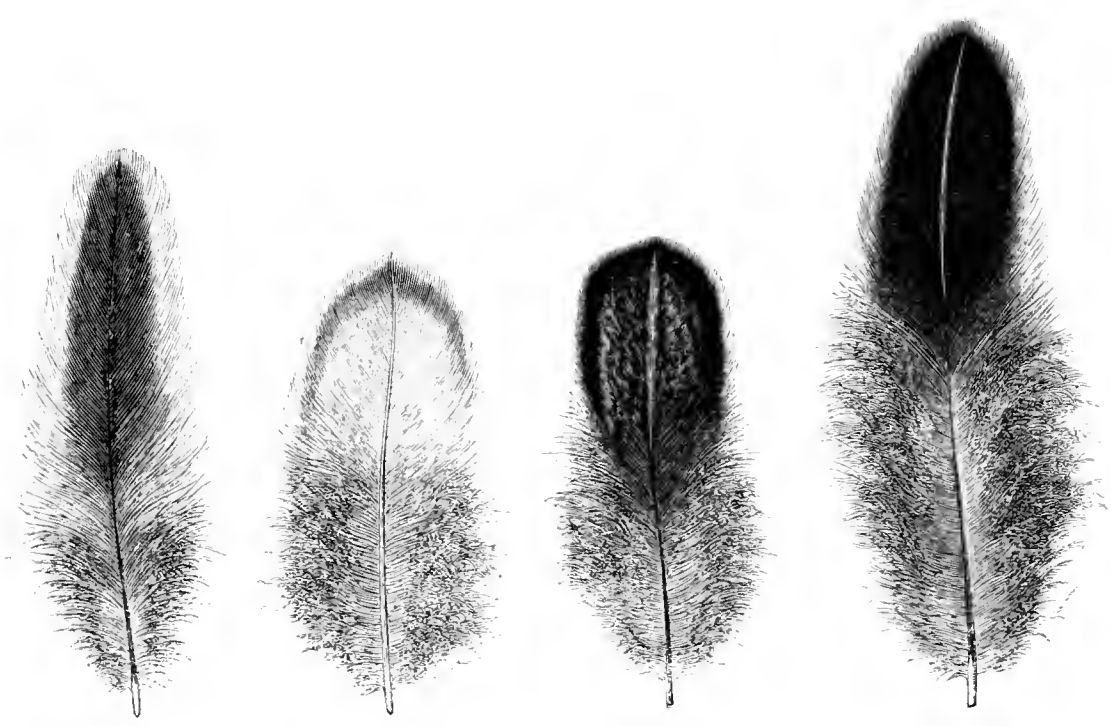


Fig. 74.—FEATHERS OF DARK-COLOURED DORKING HEN.

(and also by the judges) for Dorking hens. The breast is salmon-red, each feather tipped with dark grey or black; the wing-feathers black round the edges, with a rich brown centre, pencilled or shaded with black, and the back and saddle almost black; all the feathers except the breast showing the white shaft very distinctly. With regard to breeding for this or any other colour, it is impossible to put the matter in a better or more simple manner than he has done, viz., to take care that the cock is descended from the same coloured stock as the hens you have selected. It is said, indeed, in all the older works on poultry that Grey Dorkings are *not* "birds of colour," but judged solely by size, weight, shape, condition, &c. It used to be so; but of late there has been such a marked preference shown by judges for the "dark" colour described by Mr. Martin, and figured above, or failing that, for the richest and most handsome appearance, that colour can no longer be ignored. To breed the dark colour in question, cocks with very black hackles will be found necessary; and we may add that white in the tail

should be avoided as far as possible, as we have several times seen that blemish, though it would not weigh in most cases, give the "casting vote" in a close competition.

Almost the only other colour of hens which can be shown with success against the very dark just described, is a plumage which resembles *all over* that of the feather from flat of wing in Fig. 74, but of a still lighter brownish-grey in the centre, and showing the dark lacing round the edges rather more sharply. This latter colour is very rich and pleasing to the eye, and not long since was rather a favourite type, while it still competes successfully, and we

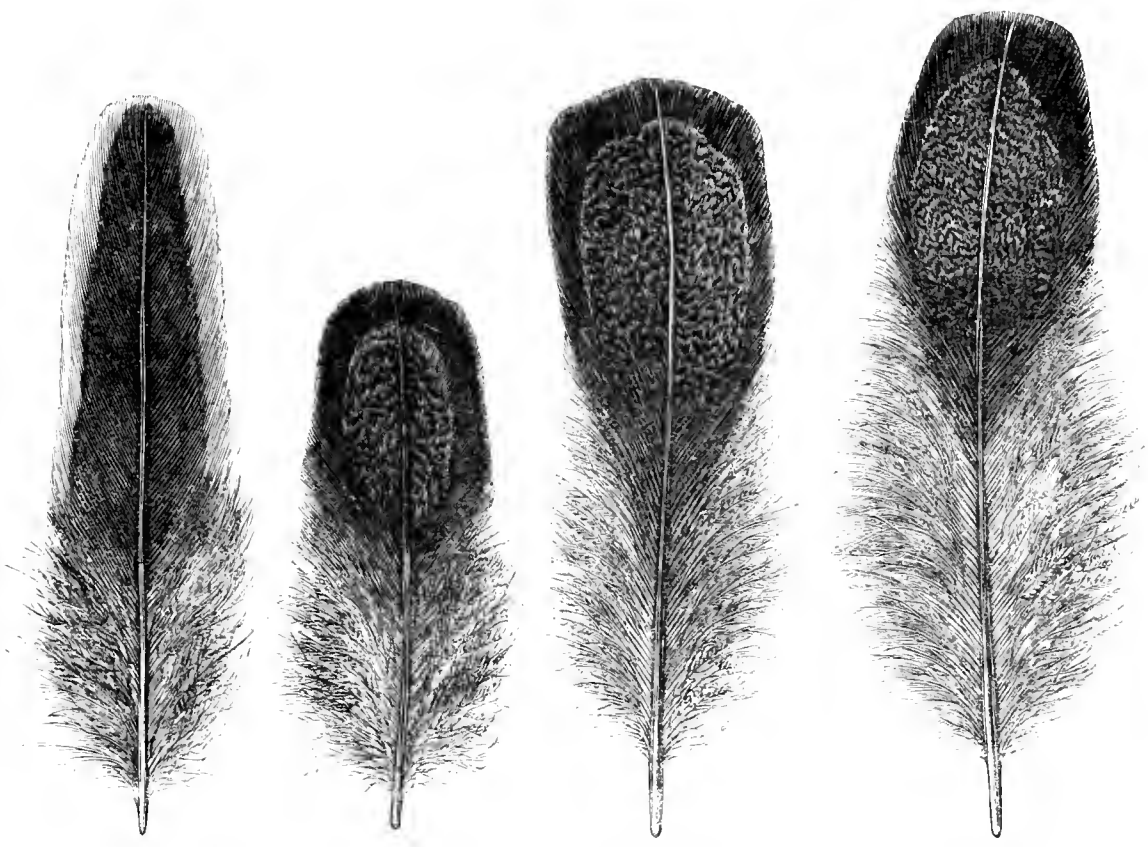


Fig. 75.—Feathers of Medium-coloured Dorking Hen.

are inclined to think sometimes produces quite as heavy weights. The cocks of this coloured strain have generally rather clearer coloured hackles than the last, though with a much more brilliant black stripe in each feather, and are not quite so subject to white in the tail, hence they make very handsome and striking-looking birds; but it is a singular fact, that while, as we have just remarked, we have often observed very large hens of this coloured strain, most of the cocks, according to our observation, are hardly equal in size to the darker birds. In Fig. 75 are carefully represented feathers from a splendid hen of this variety which has won numerous prizes, and is the one represented in the Plate.

We have occasionally seen birds win of a still lighter colour; the feathers still resembling in character those shov ·· Fig. 75, but of a yet paler shade, and the black lacing much narrower, or on some birds ıy discernible. This colour approaches very nearly to the Silver-grey

presently described, and is also like it in the breast-feathers being usually free from black or grey at the tips; in fact, it is evidently from this class of birds the Silver-greys have been derived. These hens are very handsome in colour; but as a rule are not equal to either of the preceding in either real or apparent size, and being thus unable to win except unusually large, have gone out of fashion; a fancy we own to personally for this feather being also not shared generally by breeders and judges. It is in fact too near the Silver-grey to be favoured by breeders of what is always understood to be the darker variety of the two.

The still lighter uniform grey speckle from which the old Grey Dorking undoubtedly took its name is never now seen in show-birds; or if it is, only to be beaten hopelessly by the superior weight and size of the darker usurpers. About the country, however, it is still occasionally met with; and many experienced housekeepers have expressed to us a most decided opinion that while it cannot be compared as regards size with the modern bird, it is more delicate and juicy in flesh.

Coloured Dorkings do well on any dry soil, especially if the aspect of their run be somewhat warm; but they are very rarely good layers. As sitters they are perhaps the best of all fowls, going long with their chickens, and brooding them more than either of the Asiatic races. It is, however, as a table fowl, or when birds are chiefly required for market, that this breed shows to advantage—on *that* ground it will beat all others. It "makes its weight" early—a very great advantage; and has a natural *aptitude* for getting and keeping fat—the fruit of long and sedulous breeding for that object—which scarcely even the French breeds possess. Chalk or gravel runs suit the breed best; and upon such a soil, if not hatched too early, there is no difficulty whatever in rearing them, if proper care be given to cleanliness and the ground be not overstocked. These precautions they require, being more subject than most fowls to roup, gapes, and other diseases which have any connection with foul ground.

It is worthy of note, that when brought up under more natural circumstances, the Dorking appears to become at least moderately hardy. At Linton Park, Mr. Martin had yards enough at his command; but at a visit we paid (we think in 1866) we found the whole of Lady Holmesdale's far-famed stock at perfect liberty in the park. A number of portable wooden houses mounted on wheels were provided, and dotted about on the extensive sward at distances sufficient to avoid any danger of the different families mixing, the more so as they were hidden one from the other by intervening trees. These houses were moved a little every two or three days, to avoid any necessity for cleaning; and open windows were provided at each end, which were only covered by a coarse linen curtain in the very severest weather. Under this treatment, as we remarked in Chapter I., the fowls gradually improved most wonderfully in constitution; and we did not observe even a single old bird but what exhibited the close, "glued-down" appearance just now described, and which can never be attained but with the most perfect health and condition. They fairly shone like the richest velvet; and while the very closeness of feather prevented their *looking* so large as far inferior specimens which we have seen, the real weight of a few we picked up (and it amused us to find them almost as tame as pet cats) was enormous. These birds always showed well, going to show after show with little apparent injury, on account of the splendid constitution with which they began. Such results point to the conclusion that were the Dorking thus bred and reared, on a good drained grass-range, to a greater extent, it might probably be transformed into a hardy breed.

Mr. Martin's experience of interbreeding with Dorkings does not appear to have been different from that of other fanciers with more vigorous stocks; but we must admit that in the case of this variety we should be far more anxious to obtain occasional "fresh blood" than with other breeds·

the natural weakness of constitution having to be prudently allowed for. In the case of farm or market stock, colour is of no importance, and crosses may be freely used, only taking care that every cock purchased be a massive and thoroughly healthy bird; but in breeding for exhibition we would take all practicable means of rather repurchasing distantly-related scions of the home strain, descended from similarly-coloured parents to the birds it was desired to recruit, than having recourse to thoroughly alien blood. We have also good practical reason to believe that the judicious use of "Parrish's Chemical Food," already so strongly recommended by us, would often work wonders in this breed, by imparting both size and stamina.

We have often been asked to describe the large "Surrey" or "Sussex" fowls which are so largely reared for the London market; but the truth is it is utterly impossible to do so. They are of no standard of colour, and even no fixed type of breed, except that a strong dash of Dorking blood can be traced in them all, the fifth toe being often observable; but this and all other features vary considerably. They appear in fact to be simply a fine race of barn-door poultry, improved by long and careful breeding for the London markets, which are to a large extent supplied by

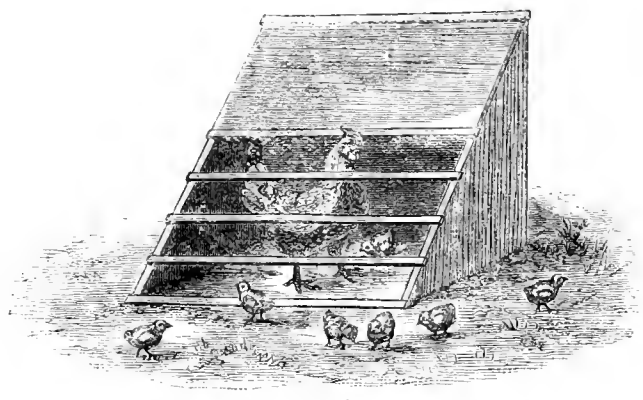


Fig. 76.

these southern metropolitan counties. They are all much like Dorkings in squareness of form, and perhaps a colour as general as any may be described to be a whitish ground, freely but irregularly covered with black and brown, or other dark-coloured feathers; some white or nearly white colour being observable in a very large proportion of the birds. Very often Dorking cocks or Dorking hens are purchased to cross with, which accounts for the strong Dorking type presented; but a proportion of the "Sussex" blood is always much preferred to pure Dorking, as being hardier and less expensive.

The mortality among these Sussex chickens is usually very small indeed, but this arises in great measure from the natural and hardy manner in which they have been reared for generations, and strongly corroborates what has been already advanced as to the advantages of keeping the birds —young and old—in a natural way.* This is the more worthy of remark, as hatching is carried on very nearly all the year round, but more especially from January to September; chickens in the latter month being greatly valued for the Christmas markets, but even these having frequently no better shelter than a cart-shed. The coop used in Sussex is almost invariably that represented in Fig. 76, measuring about thirty inches wide by twenty-four inches in depth and height. It is boarded close at the sides and back, and about half-way down the sloping top, so as to give a

* Another strong te to the same fact will be found in Mr. Teebay's notes on his Spanish, in the next chapter.

partial shelter during rain. These coops, in some parishes, may be seen about everywhere—on the strips of grass at the sides of the roads, in odd corners, in front of cottages, and in the fields. The whole district abounds in what are called *small farms;* and as every occupant of one of these farms, almost without exception, is a chicken-breeder, the connection we have already pointed out in Chapter VIII. between the small occupations usual in France and the enormous poultry products of that country receives what may be almost said to be actual demonstration from the connection between similar causes and effects in the chief chicken-raising district of England. The cottagers also breed chickens, however, some of them producing 200 annually; and the thriving condition of many engaged in this business is certainly worthy the attention of all interested in the "small occupation" question which has recently attracted so much notice.

Except at very late and early seasons, the coops are left out all night (they must be honest folk in Sussex), but are moved sufficiently often to prevent the ground smelling offensively. Here is the secret of the success, for deaths are almost unknown. While young they are fed very often, and afterwards three or four times a day, the food being the ground oats we have already spoken of, made into a thick paste with water; milk is not used till the fattening commences. The treatment is found to answer, and the birds to thrive, even in parishes where the soil is of a clayey character, though undoubtedly the chalk districts do the best. This shows that circumstances (such as a large and intelligent cottage population, with small allotments) tending to *good management,* have far more effect on poultry production than mere advantages of climate or situation.

Usually the fattening of the chickens is a distinct business from both the raising and the selling. The fatters collect from the raisers; fatten, kill, and dress the birds all ready on stated days for the "higglers," who pack and send them to the London market; some higglers, in the busy season, being known to send over 1,500 birds to market in one week. The fattening is generally completed in about ten days, the birds being always in very good condition to start with, and the food given is almost always the same ground oats the chickens have been fed upon before, but now made with milk into a thick gruel. This is given twice daily, the birds being allowed to feed themselves. Of late, however, a somewhat different system has been inaugurated, and at the close of 1870 there was published in a weekly journal an interesting account of a visit to the establishment of Mr. Olliver, of Warbleton, in which the birds are crammed by machines similar to that described by us in page 83. Warbleton is very near Heathfield, which is a very active centre of the chicken-raising district, and in fact the very locality to which most of the preceding description* more especially applies. Heathfield is itself, by the way, a clay soil; but this, as already remarked, does not seem to interfere much with its production of poultry, which we have seen to depend upon other reasons. At Mr. Olliver's establishment Mr. Crook (the writer of the article in question) found the chickens fattening in "very long thatched sheds, the sides of which were constructed of alternate uprights of rough-hewn timber, the intervening spaces being filled up with bundles of faggots. These sheds were about eighty feet long by about six feet wide, and along either side were continuous rows of coops full of chickens. The coops were capable of holding about one dozen in each, and were entirely composed of wooden bars or rails, so that there were no offensive accumulations. The object of making the sides of the sheds of faggots was stated to be for the purpose of securing plenty of fresh air, but which did not enter in upon the birds like a draught, but percolated through the faggots: thus the birds were kept in health." In three of these sheds

* It is only right to state that for many details in that description we have been indebted to some notes of a visit to Heathfield published in the *Journal of Horticulture* of October 7th, 1869.

the birds were fed out of troughs, as already described; but in other and yet longer sheds, still however constructed at the sides of bushes and faggots, they were "finished off" by the cramming machine, of which we have given a figure; the food thus given being composed of the thin ground oats and milk as before, but with the addition of some mutton suet chopped very fine. All the coops were raised a considerable height from the ground; and loose, dry mould being placed under to receive the droppings, which are regularly removed, the place was entirely free from any unwholesome smell. The cramming machine was found a great success, cramming *on an average* about twenty dozen birds per hour, with the aid of two persons. The establishment was stated to turn out regularly, "in the season," from 700 to 1,000 fatted birds per week, and the collecting-staff alone numbered some twenty men and boys, with horses and carts, whose business it was to go round the district and collect chickens of an age suitable for the fattening coops. All these, Mr. Crook was informed, "had regular districts allotted to them, in which every man knew where he was likely to have chickens ready for him, the distance they travelled being about thirty miles; and these neighbourhoods had to be regularly looked up, or else the men employed by other fatters were likely to call and pick up any produce that might be ready." Perhaps nothing could show better than this last remark the systematic manner in which the chicken-raising and fattening business is carried on in the Sussex and Surrey district, to an extent few people have the remotest conception of, and which will be ample reason for giving these particulars of a branch of national production so closely connected with the Dorking fowl, and which, if carried on in the same thorough manner, might be introduced into other parts of England with the greatest advantage to all parties concerned.

SILVER-GREY DORKINGS.—When the somewhat lighter-coloured hens whose plumage was represented in Fig. 75 were generally bred, and even the old grey colour of the original Dorking was not unfrequently seen, very beautiful clear-grey hens were often produced; and by judiciously selecting these the breed was finally established which is now termed Silver-grey, and breeds fairly true to colour. Something of the massiveness of the Coloured Dorking is no doubt wanting in this beautiful fowl; but if it be remembered how much of this has been owing to the foreign blood introduced by Mr. Douglas, it will be evident that the Silver-grey has not been really *degraded* in size through "breeding for colour," as some writers through want of consideration have remarked, but has simply *lacked the help* which the other has received from a more massive cross.

The following notes on this beautiful variety of the Dorking have been kindly furnished us by Mr. O. E. Cresswell, of Early Wood, Bagshot, Surrey, well-known as a careful breeder and successful exhibitor of Silver-greys:--

"Silver-grey Dorkings have now a class or classes to themselves at almost every noteworthy show. The Grey Dorking of ten years ago was often what would now be called a bad Silver-grey, the so-called 'Coloured' and Silver-grey having both sprung from the same ancestry of the old Grey Dorking. In the one case it has been the fashion to breed for the darkest, in the other for the lightest shades of colour.

"The chief distinctive exhibition-points of Silver-greys are as follows:—The cock should have a pure silvery-white neck-hackle, back, saddle-hackle, and upper wing-coverts; the black under feathering of the back being entirely covered by the silvery-white feathers of the neck, and the wing-coverts entirely free from chestnut patches. The tail, thighs, and breast, on the contrary, should be perfectly black. Perfection in the latter point is becoming very difficult of attainment the extremely light shades now sought in the hen having in my opinion injuriously affected that great beauty in a cock—a pure glossy black breast. After the second or third moult the best

cocks will show some grizzling on the thighs, but will not on that account breed any worse chickens. The hen should have body, back, and wings of a soft silvery-grey, perfectly free from red or reddish tinge; breast of a robin-red or salmon colour; and neck-hackle as silvery as possible, with a fine distinct black stripe down the centre of the longer feathers. The most common faults in the hen are, either distinctly reddish feathers in the wing, or a slight brownish tinge all over the body. It may be observed that the latter of these faults seems to increase with age, while the former, on the contrary, decreases; and I have had birds very faulty in this respect as pullets, which in the second moult entirely lost the reddish feathers, and became perfectly silvery. The breast-colour of the hen may vary from robin-red to pale salmon-colour; the latter is generally found with the most silvery general colouring, but I believe that the largest birds are

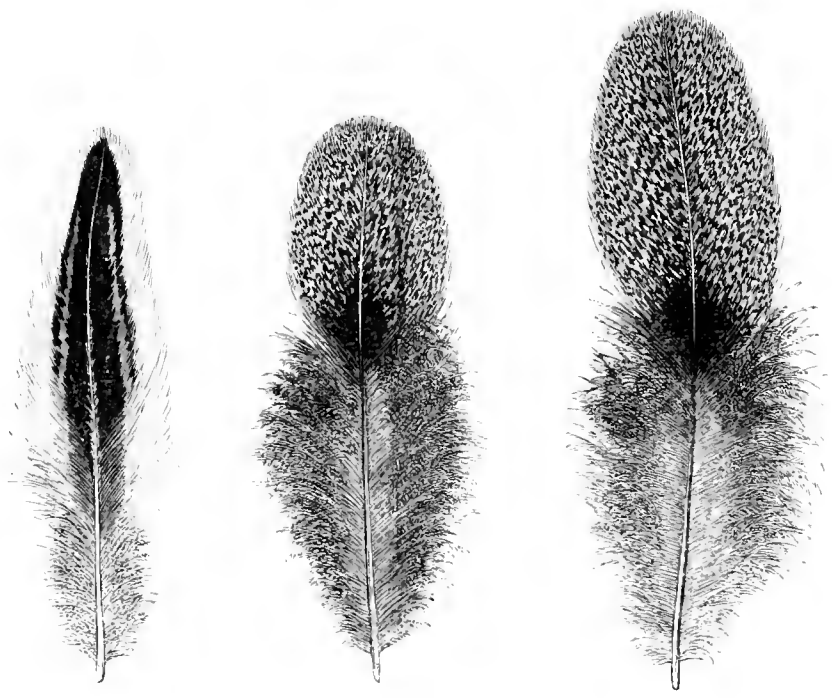


Fig. 77.—FEATHERS OF SILVER-GREY DORKING HEN.

almost always of the deeper colour. The colour of the hen whose portrait is given is between the two; she is a very large-framed bird, hatched rather late in 1871, and was never shown till she won second prize at Birmingham in 1872.

"The mating of Silver-greys for breeding requires great care, and knowledge of the pedigree of both cocks and hens. In all sub-varieties purity of blood is only a question of degree, and hence there is always danger of 'breeding back' to some points distinguishing the common ancestor of more than one stock. Never buy chance Silver-greys for breeding,* but select from a stock which has long been bred with care. A cock to all appearance correct in every point will often produce pullets with red wings, or even sandy-coloured all over; while, on the other hand, good-looking hens will breed cockerels with speckled breasts and tails. For the most part, it is true, both parents in these cases will produce birds of their own sex like themselves; but the penning of separate

* See our remarks on this very point at p. 119.

families for the production of cockerels and pullets, now unfortunately so general in the case of some varieties, is a clumsy and disappointing method by no means to be encouraged. I would select a cock as silvery as possible, with pure black breast, and mate him with hens of *medium* colour; not too pale, or many of the cockerels will have grizzled breasts. But in any case scan very critically the birds of the opposite sex in the yards from which your breeders come; and if size has to be dispensed with on one side, let it be on that of the male bird. These precautions in the selection of stock-birds should secure a meritorious progeny."

The colour of Silver-grey Dorking hens, when anywhere near perfection, is of very great beauty. The light grey ground is closely covered over by a minute pencilling of darker grey which gives that peculiar "silvery" appearance so attractive, both in this case and in that of the Duckwing Game hen. Fig. 77 represents the plumage, as far as engraving can do so; being carefully drawn from feathers supplied by Mr. Cresswell, and plucked from the very perfect hen we have selected for portraiture. Every feather on the sides and back should show the white shaft distinctly; and the plumage generally becomes very slightly darker as it approaches the tail, which latter is dark grey, the inner feathers almost black. The shades of grey vary, ranging from a soft and perhaps slightly dull grey (which should, however, remain perfectly pure and free from red or brown) to a very pale, bright, silvery grey. This last is peculiarly beautiful, and a celebrated Irish strain is noted for producing it in perfection: but such hens have the fault Mr. Cresswell has already hinted at, of producing very few cockerels which possess really black breasts; white specks appearing towards the sides and thighs, and often to a very conspicuous degree. We are not sure if this difficulty can be overcome. It is quite true that many apparent impossibilities in regard to the relative colour of the two sexes have been vanquished by the skill and perseverance of breeders, but we doubt if any case strictly analagous has ever been really mastered. We have seen in the last chapter that the attempt to mate light silvery hens with Silver Duckwing cocks, the colour of which is precisely similar to those now in question, has nearly exterminated that beautiful breed; but the remarkable fact is that the perseverance of breeders, which has been tested longer in the Game fowl than any other, seems conclusively to have proved that the only possible colour of hen to breed in purity the Silver-grey cock is a *dark, soft grey*. It is almost impossible to over-estimate the weight of this lengthened experience; and fully admitting the possibility that our views may be proved erroneous, our full conviction still is, that in breeding and showing Silver-grey Dorkings there are only two possible alternatives:—Firstly, that the judges give the preference to the deep robin breasts and darker and softer greys in judging hens, instead of the brightest and lightest as at present; or, secondly, that cockerels and pullets be bred, as deprecated by Mr. Cresswell, from separate pens, breeding the cockerels from black-breasted cocks with the darkest hens that can be procured, and the pullets from the lighter hens with speckled-breasted cocks. The following pregnant remarks by Mr. Hewitt will entirely confirm the former of these as thoroughly answering the purpose:—

"The great difficulty at the present time in judging Silver-grey Dorkings," says this eminent judge, "is to find any pen even in classes of considerable numbers that are true to feather; and this is the more to be regretted, as some ten or twelve years back they were not by any means uncommon. The fact is that at that date many strains of the Silver-greys could hold their own even as to weight, when entered in strong classes of Grey Dorkings; and to my own knowledge, from properly selected stock, chickens were bred as true to colour as any other variety of poultry. Mr. William Bromley, of Birmingham, had a few years back a stock of Silver-grey hens that were worth going miles to inspect. They were invariably *deep* 'robin-breasted,' but without even the suspicion of ruddiness on the wing-butts. I have seen from twenty to thirty hens at a time, at this

farmstead, that it was difficult to distinguish from each other. All the hens were *remarkably short* in the leg, and purely white-footed; yet, strange to say, the cocks bred from these hens were always too *lengthy* in the legs to be covetable as exhibition birds, but were perfectly clear silver in the hackle, and the breasts and tails iridescent black. These birds always bred true to colour among themselves; but when crossed with other strains, in the hope to obtain shorter-legged cockerels, invariably 'sported' in feather. It was this leg difficulty as to the cocks (striven hardly and unsuccessfully against for many years) that, I believe, made Mr. Bromley a few years back abandon the breed altogether, a matter of regret to many amateurs, who knew the stock as seen when kept in large numbers on extensive runs, and which proved to me that Silver-grey Dorkings can be continuously bred true to feather from high-coloured parents; whilst as to weight, even among the two-year-old hens, nine and ten pounds each was a general average."

A third expedient might perhaps be suggested. We believe that by allowing a clear black *stripe* in the cock's hackle, while still maintaining the silvery white of the margins, the balance of colour between the sexes might probably be restored, without perhaps injuring the beauty of the male bird, and might enable black-breasted cocks to be bred from pale-breasted and light silvery hens. This, however, would be a decided innovation on the pure white hackle now demanded, and we only mention it as what our own experience teaches us might be a *possible* solution of the difficulty, without advising it in any way. As it is, we think the present state of things gives rise to more serious faults than a little clear stripe in the hackle would be. Recently, at the great shows of the year (season 1872-3) we observed prizes given to cocks which were not Silver-greys at all, the breasts not only being speckled and the thighs heavily grizzled, but the hackles a *deep yellow;* and compared with such a fault as this last, we should consider even a striped hackle, if clear in colour, very venial. This, however, is a subject on which opinion may legitimately differ, and we simply place the suggestion at the service of breeders; with the remark that by far the *best* way both to keep colour and attain weight, would be to recognise and prefer the darker hens so regretted by Mr. Hewitt, who in this matter it will be seen corroborates Mr. Cresswell exactly. No sacrifice in the purity of the grey need be made; it is simply the darker greys and deeper-coloured breasts that should be selected, when the cocks will be all that can be desired.

The extreme difficulty of satisfying the stringent conditions just discussed is no doubt the reason of the comparatively small number of Silver-grey breeders; as in all main qualities this variety is in no way inferior to the preceding, unless it be in size. In this respect it cannot certainly compare with the gigantic Coloured birds; but is fully as hardy, and by some judges, keener than we are in gastronomic matters, is thought to be even more juicy and tender in flesh. Of its great beauty there can be no doubt; and size might very easily be improved by a little judicious crossing. Putting a fine large cockerel to the lightest Coloured Dorking hens which could be obtained, of the greyer type represented in Fig. 75, by far the greater portion of the progeny would present more or less of the Silver-grey character; and by crossing these again back to the male parent, and proceeding afterwards with ordinary judgment, the improvement might readily be maintained without losing the colour. The two strains having been so many years bred apart, the strong probability is that constitution and vigour would be also improved by the same treatment.

WHITE DORKINGS.—No more beautiful birds than these can well be imagined upon a country lawn. In symmetry the White variety surpasses, according to our judgment, all others of the Dorking breed, this fowl combining with the size of the Dorking much of the grace and grand sweeping outlines of the Hamburgh. In Dorking "blood" it is also probably the purest of them

all, as we have already seen that years ago it was the only variety which *invariably* bred the fifth toe, while there is strong reason for believing that the Coloured Dorking owes more or less to a cross with the large Sussex or Surrey fowl. This may account to some extent for the very perceptible difference in general outline between the White and Coloured races.

The following notes on this beautiful breed have been kindly furnished us by Miss Fairhurst, of Woodlands, Ormskirk, whose long attachment to it, and success both as a breeder and exhibitor, need no further endorsement at our hands :—

"White Dorkings," writes Miss Fairhurst, "are certainly my favourite breed, and I look upon them as quite amongst the aristocracy of fowls. The elegance of their carriage, the gloss and purity of their plumage, and a certain indescribable something in the way they advance to meet those in whom they have confidence, seems at once to say, 'I belong to the upper rank;' and their dress of pure white satin, with its red coral ornaments, is a regal court suit in which they are fit for presentation to their sovereign any day, on the grassy banks of whose mansion no more lovely ornament could be placed. They are equally to be desired for the country villa, wherever a green run can be secured in front of the garden, protected by wire or a sunk fence, so that they can be *seen* along with the flowers, giving life and beauty to the scene. Their natural disposition seems more tame than that of other fowls, and they soon learn to eat from the hand; indeed, I wish any lady would notice, as I have often done, the peculiar grace and dignity with which a White Dorking pullet will advance toward her to be fed from her hand. They are of all things essentially fit to be considered as 'ladies' pets.'

"With all this, they are often quite ignored at poultry-shows; only a few give a class for them, and the breeding of them is thus discouraged. Why this should be I cannot say. Of all *ornamental* fowls they are the largest on the table; they are good layers, if generously fed, and kept in dry, clean houses; and even continue to lay in the winter better than the Coloured Dorkings. Their eggs are peculiarly delicate, the shells being of a pinky or French white shade, and of a good size, fully half as large again as any of the Hamburghs—indeed, excepting Spanish, I do not know any finer, if the hens are eighteen months or two years old.

"A dry soil is indispensable to these birds; and to do them justice they require, like all Dorkings, an extensive range. In a confined space their plumage would become dirty, and I never find them healthy when such is the case. In a well-ordered, clean farmyard they do very well, and in such circumstances never soil themselves more than a bath of clean white sand will put right. Of course before showing they must be washed, and I think the bath does them good. Some common soda melted, and a little nice white soap, is all I ever have used to cleanse their feathers, after which they are rinsed from it most thoroughly in tepid water from a spring. Some use ammonia, but on several occasions when I have tried this it has made the birds quite a canary colour; it may have been used too strong, but I find soda better without it. A clean, airy room, littered with straw and with a low perch at one side, will enable them to plume their feathers in a day or two, but long confinement would not improve them in any way for exhibition.

"With regard to size, I can see no reason why White Dorkings should not be brought up to as high a standard as the Coloured ones, if the same encouragement were given at poultry-shows, to cause equal emulation amongst breeders of them to bring to perfection every point. Instead of this being the case, when on several occasions I have tried White ones in a class where no colour was specified, but only Dorkings, invariably the birds have had no notice. This has not been the case, as might be supposed, for want of size or quality; for on one occasion I remember, at the Kendal show, in 1869, I had two pens of young birds—one White Dorkings, the other Coloured—both of the same age; but though the White cock was *nearly one pound heavier* than the Coloured, he had no notice,

while the Coloured one took second prize. The White bird, thus overlooked because he was white, took first prizes that same year at Birmingham, Bristol, Bath and West of England, and Manchester shows; he went also to the Crystal Palace, but there—I presume before the judges saw him—had his tail so broken and his whole plumage spoiled that he only took third prize, and returned home to die in a short time. I mention these things only to show that it could not have been for want of either size or quality that he was beaten by the really inferior bird at Kendal, as White birds almost invariably are when brought into open competition with the Coloured.

"I find White Dorking chickens no more delicate to rear than others. They must be dryly and warmly housed at night, have plenty of clean water to drink, with bread-crumbs and ground oats as general food. Small broken wheat from a thrashing-machine I also find they like and thrive well upon. For a change I take a teacupful of rice, and putting it into a saucepan of boiling water, let it boil very fast for twenty minutes, till the water is absorbed and the rice loose as for curry. Then in a large bowl I have kitchen scraps of meat, &c., with dry bread, all cut in small pieces not much larger than rice, add a little spice and sometimes herbs, and a little either egg or oyster-shell pounded. When this is all mixed together dry, put the hot rice over the whole, with a little dry oatmeal, if required, to keep it crumbly; mix with a fork, and there is a bowl full of nice loose food. Sufficient of this to feed a large number for two days can be made at once without fear of becoming sour. If every lady would insist that her cook should collect the fragments, so that nothing should be lost, how many chickens could be fed on what is now thrown away!—and even how many poor children might have a good dinner if such a course were more generally adopted. Let the scraps from the dishes, with the left potatoes, be made into a tasty "hot-pot" for the children, and the bits from the plates go to the chickens; the hearts of both would rejoice, and the careful housekeeper would be no poorer—indeed, expense would often be saved, as sinks and drains would not be nearly so often stopped up if fat and other scraps were strictly kept out of them.

"The points in perfect White Dorkings are in a great degree the same as for Coloured ones, viz., deep square bodies, with the tail inclining backwards, thus showing greater length of back than those breeds in which head and tail approach each other. The rose comb should not hang over the eyes, but stand firmly up like rock coral, with the spike at the back long and straight. The legs should be quite white, and the extra toe well defined, springing clearly from the leg and turning up. The weights I have obtained as yet have been, in cocks from eight to ten pounds, and in hens from six and a half to eight pounds—what other *ornamental* poultry can equal that?—and I hope yet to see the day when my favourites shall increase to the size the Coloured have become."

In reference to the case at Kendal mentioned by Miss Fairhurst, we may remark that we have frequently noticed at shows the curious fact, that if two fowls are really of equal weight and size, and one be white while the other is dark-coloured, the white bird invariably *looks the smallest.* By the courtesy of various show officials, we have been enabled to test this fact by direct experiment on several occasions, and it should be carefully remembered by judges or other parties, when comparing white and dark birds of this or any other breed.

There is no doubt whatever, as Miss Fairhurst remarks, that the size of White Dorkings might and probably would be increased by careful breeding alone, were breeders more numerous and emulation more general; but much help might be obtained by means of a cross with the more massive Coloured variety. The advisability of such a proceeding struck us years ago; and, as we then mentioned,* on a visit to Linton Park we saw the process commenced with every apparent

* "Practical Poultry Keeper," p. 128.

prospect of success; several White Dorkings of unusual size and merit being very conspicuous, besides the famous Coloured stock. Unfortunately, that particular experiment was terminated by Lady Holmesdale's retirement from "the fancy" soon after; but at the public sale by auction of her celebrated strain its success was fully demonstrated, several White Dorkings of very unusual size being brought to the hammer. One fine bird in particular, Mr. Martin informs us, weighed slightly over twelve pounds, and not being at all fat, might easily have been made to weigh thirteen. This bird won at very nearly all the great winter shows following, standing clearly out far above his competitors; and probably the influence of even the few birds then sold has had something to do with the perceptible increase of size during late years.

In the cross at Linton Park we are informed that "the method employed was to put a massive Coloured cock, the darkest that could be spared, to White Dorking hens. The first cross from this is cuckoo-colour; and these birds were crossed again into the White, when many White birds appeared, and after that there is no difficulty." The reason for choosing the darkest cock possible was, that in all changes of colour the transition from *black* to white is invariably made with greater ease than any other, just as crossing Black-red and White Game produces a Pile, the red being unchanged, but the black converted into white. As these pages go to press, we learn from Mr. Martin that he has commenced the same experiment again, using for the purpose his celebrated Crystal Palace rose-combed prize bird; and amongst the results already attained is a fine cockerel, which at eight months old scales ten pounds and a half without any "feeding up" whatever. Such fruits as these point out a legitimate field for the skill and enterprise of White Dorking breeders.

The result of many inquiries we have made would tend to show that White Dorkings are somewhat hardier than the Coloured, besides being far better layers. A contrary opinion has, however, led to their being crossed in various cases with the White Game; and there is not the slightest doubt that it is this cross which has produced some at least of the weedy birds so often seen at shows. Such stocks not seldom breed single combs, and are apt to prove uncertain about the fifth toe; indeed, whenever we see very narrow, slim-looking birds, with the fifth toe imperfectly developed, we feel pretty sure the strain has been contaminated in the manner described. The motive has no doubt been to improve the constitution; but the Game Fowl does not possess a single quality adapting it for a cross with the Dorking breed; and if the chicks be brought up in a natural and hardy manner they will be as robust as any Game-crossed stock. The cross just described, however, will be found to improve the constitution as well as size.

The greatest difficulty in breeding White Dorkings for show consists in the tendency of the cocks to become yellow or dirty straw-colour in the upper plumage, which they share in common with nearly all white fowls. As in the case of White Cochins, it is necessary to breed only from the birds which show the richest and clearest white; and to provide shade during the summer, if even the best birds are to be kept in show condition. We have, however, occasionally seen cocks whose dazzling purity of colour left nothing to be desired; and though we must admit that we have found such specimens very rare, they prove the *possibility* of attaining a perfect standard with patience and care.

CUCKOO DORKINGS.—There is a fourth variety of Dorkings, in which the plumage is what is called in England "Cuckoo-colour," but in America "Dominique," and which may be exactly seen in the plate of Dominiques which illustrates the chapter on American breeds. The marking consists of bars or pencillings of dark blue-grey over a ground of lighter grey. The precise shade of marking may vary considerably, the ground-colour ranging from almost white to bluish-grey, and the bars or pencilling from bluish-grey to nearly black. This variety is generally

midway in size between the White and Coloured Dorkings, is very hardy, and a fair layer; and, though comparatively very little known, is, from its hardiness, best adapted of all the Dorking breeds for general farm purposes. Various attempts have been made to encourage this breed, a special class being provided at the Crystal Palace shows in 1871 and 1872, but the result was only four entries the first year and eleven the second. In other instances similar efforts have been rewarded by no better success; and hence, in spite of the considerable increase on the second occasion, it appears as if the variety were more likely to be valued by producers than by fanciers. It is our firm conviction that the origin of this variety was the crossing of the White and Coloured breeds, which Mr. Martin has already stated to produce in the first instance the identical colour; and the truth of this hypothesis is rendered almost certain by the superior hardiness of the fowl under discussion, which is constantly proved to result from the crossing of distinct or long-separated races. Were it not so, in fact, the small number of breeders and stocks would almost inevitably cause unusual *delicacy* of constitution, as in other similar cases. It is true that colours which owe their origin to crossing usually give extreme trouble to preserve them; but Mr. Darwin has conclusively proved the marking in question to have a strong, or, as he calls it, "prepotent," tendency to transmit itself, as well as to be produced by crossing, which strongly tends to show that it belonged formerly to some progenitor of the poultry races, and entirely removes such a difficulty in the present instance.

In breeding Cuckoo Dorkings for show, the chief fault to guard against is the occurrence of reddish or golden feathers in the hackle or saddle of the cock. The cuckoo colour should be pure all over. White in the tail is also rather apt to occur, and must be avoided with equal care. Birds thus bred are not by any means destitute of attraction for the show-pen, and fashion changes so much even in poultry, that we should not be surprised to see them yet becoming popular.

It will be seen further on how closely allied this breed is both to the Scotch Greys and to the American Dominique. On one occasion, in fact, we observed a prize given at Birmingham for "Dorkings" to a pen which, on inspection, proved to be Scotch Greys; almost the only difference between that variety and the present being the absence of the fifth toe. It is somewhat singular that in three different quarters a fowl should have been produced, in each case of the same cuckoo colour, and evidently of nearly-related blood; and in each case also highly valued by homely producers for its good qualities, while little prized by mere "fanciers" of fowls.

In exhibiting any variety of Dorkings, it is particularly needful to guard against both over-feeding and over-showing, as this breed succumbs to either much sooner than most others. The temptation to "feed up" is of course great, Dorkings being, even now, so greatly judged by size or weight; but the invariable result is to make the plumage "loose" and ragged, and give the birds a peculiar "knocked-about" appearance, which no fowl can so ill bear. We could number up at least a dozen pens of Coloured Dorkings we have seen ticketed with honours at various shows, and which we have known from various sources to have died within short periods after, from the combined effects of over-feeding and over-work; and this still occurs occasionally, though it gives us pleasure to acknowledge that the best judges have for some years past shown themselves thoroughly alive to the evil, and, by passing over pens of birds whose lives could evidently be accepted by no insurance company, fine as they undoubtedly were, done much to check the fattening which used to prevail, and, even when it was not fatal, rendered practically useless some of the best birds which have ever been bred. Another caution must however be given, against breeding from birds which are being exhibited. We would not of course affirm that a fine cock and hen may not be picked up off their run, if in perfect health, and shown on any single occasion

without detriment to the vigour of the progeny; but we do mean to say most emphatically, that while a pen of birds is being shown from time to time, it is hopeless to expect chickens of any value even from such eggs as may chance to hatch. This truth applies more or less to all breeds of poultry, but to Dorkings peculiarly so; and it is therefore most desirable, after the breeding stock is once mated and put on the proper runs, to leave them undisturbed till the season is over. Even birds that have been from show to show through the winter, unless great care has been taken to prevent evil results, will rarely produce a strong and vigorous progeny.

Mr. Hewitt adds a few general remarks as these pages go to press, which we insert with much pleasure. The first paragraph describes a peculiar characteristic of the breed generally; the second will be read with interest as relating to now almost extinct varieties. The first-mentioned of these appears to be the grey feather already described by us—the description, though in different terms, applying exactly.

"In hunting districts, where foxes are generally abundant, Dorking fowls are not the most advisable breed, as they then entail constant anxiety and frequently-repeated vexations. This arises from their perfect inability, when suddenly surprised or excited, to save themselves by vigorous or well-sustained flight; whilst their futile attempts at running in grass of only two or three inches in height renders them an easy capture. For the like reason, Dorkings are often known to be absent without leave after the visits of the itinerant scissors-grinder, or such-like occasional wanderers round the homestead.

"For my own part, as an arbitrator, I deeply regret we no longer see specimens of the old-fashioned Grey Dorkings, such as were, twenty or more years back, regularly exhibited at Hitchin by the Rev. Mr. Boyes and others. They were of beautiful feather, very similar in colour to the lichen moss we so frequently find on old park palings; and what renders their disappearance the more remarkable is, that they were at that time great favourites in the surrounding districts, and were frequently 'claimed' at very high prices; in fact, I once remember three pens changed hands at a single show, at £50 per pen of three birds. Another most useful, though I admit not a very taking variety to those who wish to please the eye rather than the palate, is now only very rarely to be seen, viz.:—the Red-speckled Dorking, a variety of great frame, exceedingly clear and white in the leg and foot, and of the most hardy constitution. True it is, these fowls were wont to be marked somewhat irregularly, the feather being a deep chestnut, with a white crescent-shaped tip; but for hardihood they could not be outdone, besides which, the quality of flesh was unsurpassable and most abundant. A regular, well-directed attention might soon have supplied perfectly-matched pens of even this erratic variety."

We have already seen that Dorkings, after *long-continued and judicious* training, may be considered fairly hardy; but any given strain can only be thus "acclimatised" gradually, and with the resources most poultry-keepers have at command the chicks should not be hatched early. Very late in March is quite early enough to have broods out, and April or May chickens do still better. Totally different in this respect to the Brahma, the Dorking grows very fast and early; so that while both the newly-hatched chicks and the adult fowls are not very different in size, at the age say of three months a Dorking chicken will appear nearly double the size of a Brahma. This is one of the most valuable points in a table breed, and also diminishes the need of early hatching for the autumn and winter shows; for while Brahmas or Cochins hatched in May will generally be too small and immature, even for Birmingham, the young Dorking of the same date is in its full bloom and beauty. We should regard early in May as generally the best time of all for hatching this breed; and at that season, in most years, the young stock may be used to a hardy out-door life without any danger. Iron in the water, or some other simple tonic, should always be given, and

will serve to ward off gapes and roup; which, if they once enter a Dorking yard, are particularly difficult to stamp out again.

The "bumble-foot" to which Dorkings are so subject, has often puzzled breeders. The affection has been almost always ascribed to high and small perches, the feet being supposed to be injured by the weight of the bird when flying to the ground, or by stepping on some sharp stone. Such may very possibly be the *immediate* exciting cause of many cases, just as a slight blow or strain may be said to be the exciting cause of a severe case of cancer; but in both cases other and more deeply-seated causes of disease must be sought for, since we have known many instances of the worst form of bumble-foot in yards where the birds had only turf to walk upon, and were not allowed to roost at all, but bedded upon straw. Again, the equally heavy Brahma or Cochin does not suffer in this way, being only subject to abscess in the foot in the case of some actual irritation, such as the entrance of a thorn or small piece of glass; on the removal of which, and proper treatment, the tumour speedily disappears. We have, therefore, years ago been forced to the conclusion that the cause of this tiresome disease must be sought in the law long since discovered by physiologists, that any abnormal excess in the structure of any part of the body is frequently accompanied by what may be called *weakness of function;* and that when the abnormal excess, by breeding or otherwise, becomes constant, the tendency to weakness almost invariably becomes constant too. We shall have occasion to mention a confirmation of this view in the case of Houdans; and hence it would appear that the difficulty is inseparably connected with the *fifth toe* which is so dear to the heart of Dorking breeders. If they *will* have it, they must take the consequences. The absurdity of insisting upon a feature which has such actually injurious results is singularly aggravated in the present case by the fact that Dorkings were, till very lately, always strongly affirmed *not* to be birds "of colour," but the sole breed of poultry which was not only bred for exclusively table or practical purposes, but even judged in the same way. Yet here is a point which is more arbitrary than any standard of mere feather can be; can be shown to produce inevitable evils; and yet retains its place in this *par excellence* "practical" breed! We are, of course, perfectly aware of the utter impossibility of changing views now so deeply rooted as that of "the fancy" upon this point; but it is none the less a duty to point out the simple state of the case, having done which both our duty and responsibility ceases.

The most useful crosses of the Dorking fowl have been already treated of in discussing Brahmas and Cochins, and we need not go over the same ground again. The cross with the Game is perhaps the next most frequently employed, but, as we recently remarked, possesses no merits to recommend it, greatly diminishing both size and squareness of form, without any compensating advantage, the supposed gain in constitution being very trifling. The only other cross calling for special mention is that with the Houdan cock. This cross possesses no beauty to make it desirable, and the plumage varies greatly; but the chickens produced are very hardy, almost always lay well, and in early maturity surpass the Dorking itself, while the flesh is of most excellent quality. To those who wish to increase the hardiness of the Dorking, but object to Asiatic crosses on account of the feathered legs and yellow skin, or who wish to preserve the "five claws" which are such a passport to the good opinion of a London salesman, this cross may be safely recommended as likely to answer the purpose.

JUDGING DORKINGS.—The need of special watchfulness against prejudicial or unhealthy fat in judging this breed—the Coloured variety more especially—will have been gathered from our preceding remarks. Time was when the scales often decided which were the prize-winners; but these aids to critical observation are now rarely used by good judges, except in the case of water-

fowl and turkeys, or to give a casting vote between two pens whose comparative merits it appears impossible to decide otherwise. The feet also need attention; birds "possessed of a sound understanding" always being given preference to others suffering from bumble-foot: though we have seen a class in which not one sound-footed old cock was to be found. Perhaps the most difficult point in judging Dorkings, however, is to watch against malformations of the feet which have been fraudulently removed; for in obedience to a law of nature well understood by florists and pigeon-fanciers (whose experience in variation from normal types is greater than that of perhaps any other classes), that when any structure is once got to vary, there is practically no limit to the *extent* of the variability—a law well expounded and illustrated by Mr. Darwin—the abnormal structure of the Dorking foot is very apt to run into still more abnormal forms, which disqualify otherwise fine birds for the show-pen. Birds are not unfrequently produced which possess *three* back toes, or have an extra toe high up the leg; or, in the case of the cock, with supernumerary spurs, which have been known to grow in every possible direction; and these abnormal structures are not unfrequently amputated by fraudulent exhibitors. We cannot pretend to any great skill ourselves in detecting such matters, actual experience alone being capable of imparting it; but we have on two occasions seen prizes awarded to birds which showed unquestionable traces of such amputation, and every judge should give to this point such attention as time and opportunity may allow him; though we must acknowledge that both are often so scanty as to render detection of any skilful fraud almost impossible.

As regards the combs of the various breeds, our opinion has always coincided with those of Mr. Hewitt, as kindly expressed in the following remarks. We may add, however, that nearly all judges we are acquainted with consider the rose comb the *only* proper comb for a White Dorking; and that our placing single combs in that variety amongst the List of Disqualifications will be found practically borne out by the judging at all important shows.

"The author of the present work," says Mr. Hewitt, "having requested me to give my opinion as regards the combs of the Dorking families, I comply, but admit willingly they are not entirely concurrent with those of some of the highly-esteemed colleagues with whom I have officiated; I therefore append my reasons for holding them. In the general class of Grey Dorkings, I consider single or rose-combs equally admissible. In the Silver-grey Dorkings, I myself decidedly prefer the single comb, from the fact that rose-combed birds of either kind usually present a coarseness of character when compared with the others, that except in occasional instances is very conspicuous. In the Silver-grey hens the rose comb deprives them also of that jaunty appearance and high quality for which they are so generally admired. It is but rarely Silver-grey Dorkings with rose combs are now met with; but a truly-feathered pen of this character took a number of prizes some years back, alike under the decisions of several of our principal poultry-judges, and my own arbitration. In the White Dorkings, I confess, though opposed to the convictions of some whose opinions I highly value, I am not friendly to the single comb, simply because I never yet saw a pen possessing this characteristic that were not at the same time too agile and elastic in their gait and weedy in general conformation to accord with my notions of Dorking character."

Only one further general remark on judging Dorkings need be made. The Coloured variety has often been stated not to be "birds of colour," and in the "Standard of Excellence" Scale of Points, none for colour are allowed. It is due to that work to acknowledge that, although this does not represent modern judging, such is not owing to original error at the time that scale was drawn up, when Dorkings really *were* judged with little or no reference to plumage; and that the "Standard" represents the judging of this breed of some eight years back with an accuracy which compares very favourably with its tables for some other varieties. At present, however, dark-

plumaged birds have such a marked preference over others that colour can no longer be ignored in any scale, though our notes do not justify us in giving it so much weight as in other breeds. As we stated in an earlier chapter that the scales we present do *not* represent in several particulars our own wishes or views, we think it well to say more definitely here that in this particular especially we would wish matters otherwise, and that we give weight to colour *against* our own desire entirely. We think it was well there should be one breed *not* judged by fancy points, but by table value, if such standards could only be maintained; and shall rejoice if any further change in this matter tends again towards the scale in Mr. Tegetmeier's old "Standard of Excellence" rather than our own. Meantime, however, we can only present our analysis of actual judging as we find it; and the present state of things furnishes a somewhat curious comment upon the views we have already advanced* as to the absolute *necessity* for arbitrary standards in judging fowls at shows. Formerly Dorkings were very greatly judged by weight, and the evils of *that* system were plainly seen in those over-fattened birds we have already alluded to. By degrees these evils were discovered; but as soon as "condition" began to have more importance allowed it in comparison with mere weight, the *appearance* of the bird came into the scale, and the handsome appearance of the dark birds gave them a sensible advantage over the grey pens, besides the fact of Mr. Douglas's new dark stock being almost always really larger than the old.† Thus by degrees, no doubt, the eyes of the judges became accustomed to prefer the darker strains, which have now made it rather difficult for lighter birds to win, and nearly impossible for hens irregularly splashed or coloured, or which otherwise present an unpleasing appearance. The weight that ought to be allowed to colour we have found it very difficult to determine; the more so because nearly all judges labour under the (perfectly honest) impression that they do *not* give it any weight at all: but it is simply impossible, as any accurate observer may satisfy himself by trial, to reconcile the great bulk of the awards in Dorking classes in any other way. We have found much more weight evidently allowed to colour at some shows than others, even by the same judges, which may partly be accounted for by variation in light, kind of pens, &c.; but have done our best to calculate a fair average, though we must admit that we have found most of those few exceptional awards (we speak only of evidently *correct* ones, always rejecting manifest blunders) which refuse apparently to be reconciled with any definite Scale of Points at all, amongst the Coloured Dorking classes.

There is one case in which the scales and weights should always be used in judging Dorking classes, in simple fairness to exhibitors. We refer to those occasions on which White, Silver-grey, and Coloured birds compete together. Unless this be done, it is impossible that the light birds should have justice done them, for the reason already stated, that white fowls of really the same size and weight invariably look smaller by the side of dark ones. Had this precaution been observed, the White cock mentioned by Miss Fairhurst would not have been beaten by a bird really a pound lighter in weight; though, from repeated personal test on our own part, we feel perfectly satisfied that he really appeared the largest to the eye of the judge.

* See page 113.

† Mr. Hewitt writes on this point: "My own experience is, that as an almost invariable rule the dark-feathered Dorkings of the present day really *are* the most weighty and thick-set birds if taken in hand. I do not allude to purposely fatted fowls, which afterwards are frequently unprolific; but birds in proper breeding condition as stock fowls." We can corroborate this from experiment; and very naturally the almost invariable nature of the rule would lead a judge, unless he actually weighed the birds, to conclude that, even in case of what might be an occasional exception, the dark pen was still the heaviest, and to decide accordingly.

SCHEDULE FOR JUDGING DORKINGS.

General Characteristics of Cock.—*Head and Neck*—General appearance of head rather large, but dignified, and free from coarseness; beak stout and well-proportioned [not "short" as in the "Standard"]; comb, if single, large, upright, evenly serrated, and free from excrescent growths—if rose, square or upright on the head, wide in front, and narrowing to a peak pointing backwards with a slight upward inclination behind, and the tops of the points presenting an even surface free from hollow in the middle; wattles very large and pendent; deaf-ears moderately developed, hanging as nearly as possible about one-third the depth of the wattles; neck rather short, and very full of hackle, making it appear extremely broad at the base, and tapering rapidly to the head. *Body*—General appearance deep and square; the outline, when viewed sideways, presenting almost the appearance of a short rectangle (see Fig. 78); back broad and rather long; saddle broad, but inclining downward to the tail, which springs out at nearly a right angle; breast very deep, prominent, and full; wings large and broad. *Legs and Feet*—Thighs large and well-developed, but carried "along" the body so as not to be conspicuous; shanks short, moderately stout, fine in texture, perfectly free from any sign of leg-feather, and set on well to the body—the spur in the proper position, pointing rather inside; toes large and well-spread, the hinder toe being double, and the extra toe well-formed—viz., the normal toe as nearly as possible in the natural position, and the extra one placed above, starting from close to the other, but perfectly distinct, and pointing rather upwards (see Plate). *Tail*—Full and ample, carried nearly erect, but not squirrel-fashion, and the sickles very broad and sweeping. *Size*—Very large, ranging from ten to thirteen and occasionally even fourteen pounds in adults, and eight to eleven pounds in cockerels. *General Shape*—Square and plump. *Carriage*—Rather quiet but stately, with the breast carried well forward.

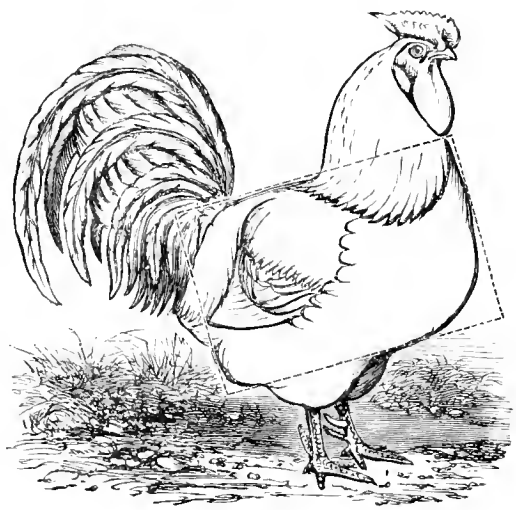


Fig. 78.

General Characteristics of Hen.—*Head and Neck*—General appearance of head neat and matronly; comb resembling the cock's if rose, but if single falling over to one side of the face; wattles and deaf-ears as in the cock, but proportionately smaller; neck short and neat. *Body*—Very similar in general appearance to the cock's, but longer in proportion. *Legs and Feet*—Like the cock's in all points, with the exception of spurs. *Tail*—Well-developed and the feathers very broad, but carried rather closely if the bird is in healthy condition. *Size*—Very large, ranging from eight to ten pounds, or even more. *General Shape*—Plump and deep, but rather long compared with the Asiatics. *Carriage*—Staid and matronly.

Colour of Grey Dorkings.—*In both Sexes*—Comb, deaf-ears,* and wattles brilliant red. Legs a delicate white, with a pinky shade. *Colour of Cock*—Hackle white or straw, more or less striped with black. Saddle resembling hackle; back various shades of white, black and white, or grey, mixed with maroon or red. Wing-bow white, or white mixed with black or grey; wing-coverts or bar black glossed with green; secondaries white on outer web, black on inner web. Breast and under-parts black, or black mottled with white, and occasionally with red. Tail black, richly glossed, often however mingled with white. *Colour of Hen*—Hackle white or pale straw, striped with black or greyish black. Breast a salmon red, each feather tipped with dark grey verging on black. Rest of body nearly black, the shaft of feather showing cream-white, and each feather being slightly paler on the edges; except on wings, where the centre of the feather is a brownish-grey ground, covered with a small rich marking, surrounded by a thick lacing of the black. Tail also nearly black, the outer feathers slightly pencilled. Another successful colour is, *every* feather over the body pencilled a brownish grey in the centre, with a black lacing round, breast being as just described. In a very few cases hens have won with a colour approaching silver-grey, the black lacing being almost absent, and the pencilling lighter; but this is never the case unless very large and fine birds.

Colour of Silver-grey Dorkings.—*In both Sexes*—Comb, face, deaf-ears,* and wattles brilliant red. Legs white, or pinky-white [in this breed the legs are much more pinky than either of the others, usually showing a very strong reddish tinge between the scales]. *Colour of Cock*—Hackle and saddle pure silvery white, free from both straw-colour or marking of any kind. Back, shoulder-coverts, and wing-bow silvery white; wing-coverts, or "bar," lustrous black glossed with green or blue. Secondaries

* The colour of deaf-ears is not of *great* importance even in Silver-greys; but there can be no doubt that red is the correct colour, and that white is some little disadvantage in competition.

white on outer web, black on inner web, with a black spot at end of each feather; corner of wing appearing clear white with a black upper edge when wing is closed; primaries black, with a white edge on outer web. Breast and all under parts deep black; but some grizzling with white on the thighs of old cocks not objectionable. Tail deep black, the sickles brilliantly glossed. *Colour of Hen*—Hackle silvery white striped with black. Breast robin-red or salmon-red, ranging to almost fawn-colour, shading off to ashy grey on thighs. Body and wings a clear silvery grey, finely pencilled over with darker grey, and free from any red or brown tinge, but may vary in effect from soft dull grey to bright silvery grey. Tail darker grey, inside feathers black.

COLOUR OF WHITE DORKINGS.—*In both Sexes*—Comb, face, deaf-ears, and wattles brilliant coral-red. Legs white, or white with a very pale pinky shade. Plumage all over a pure snowy white; the cock's upper plumage as free from any shade of straw as possible.

COLOUR OF CUCKOO DORKINGS.—*In both Sexes*—Face, comb, deaf-ears, and wattles brilliant red. Legs white, or pinky white. Plumage all over a grey or blue-grey ground, pencilled across as in Pencilled Hamburghs with bars of a darker grey or blue-grey.

VALUE OF DEFECTS IN JUDGING.

1. COLOURED DORKINGS.

Standard of Perfection.	
A bird ideally perfect in size, shape, condition, &c., and of good colour, to count in points	100
If of extraordinary size, add on that account[a]	5

[a] See note to Table for Cochins.

Defects to be Deducted.	
Coarse head	6
Faulty comb	5
Fifth toe not perfect in form and development	10
Tenderness on the feet	8
Colour not good	12
Crooked breast	10
Want of size	28
,, ,, general symmetry	10
,, ,, condition	14
,, ,, ,, (if total, or gross over-fattening)	30

DISQUALIFICATIONS.—Wry-tails, or any other actual deformity. Total absence of the fifth toe. Legs any colour but white or pinky-white, or with any vestige of feather. Combs or colour of two hens not matching in the pen.

2. SILVER-GREY DORKINGS.

Standard of Perfection.	
A bird ideally perfect in size, shape, condition, &c., and of good colour, to count in points	100
If of extraordinary size, add on that account[a]	5

[a] See note to Table for Cochins.

Defects to be Deducted.	
Coarse head	8
Faulty comb	8
Fifth toe not perfect in form and development	10
Tenderness on the feet	8
Faulty colour	24
Crooked breast	10
White in deaf-ear[b]	4
Want of size	18
,, ,, symmetry	12
,, ,, condition	15

[b] See note on last page.

DISQUALIFICATIONS.—Same as for Coloured Dorkings, adding only, presence of white in cock's breast or tail,* and any fraudulent plucking or trimming of foul feathers.

* It is not without some hesitation we retain "white in cock's breast" in the List of Disqualifications. It is understood to be so, but we have recently seen many prizes given to birds much speckled on the breast, and which in other points also could not be called good Silver-greys. Considering, however, that such awards have always been bitterly complained of by the best breeders, who wish the requirements of colour retained; that such disqualification is according to old and well-established usage; that the *best* judges wish it retained; and that to give prizes to birds thus disfigured is, in our own personal opinion, a decided error; we have thought it best to throw whatever weight of authority this work may possess into the scale of the higher standard, especially as we have seen that it can be easily bred by a proper selection of stock.

VALUE OF DEFECTS IN JUDGING.

3. White Dorkings.

Standard of Perfection.	
A bird ideally perfect in size, shape, condition, &c., and of good colour, to count in points	100
If of extraordinary size, add on that account[a]	5

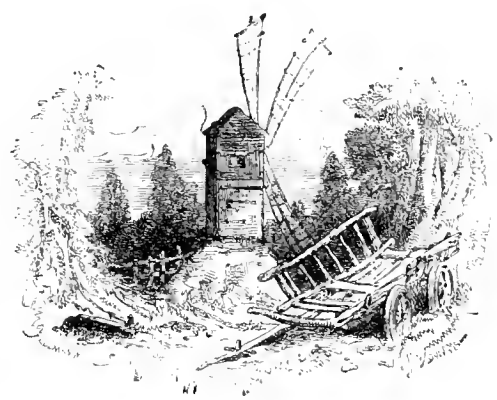
[a] See note to Table for Cochins.

Defects to be Deducted.	
Coarse head	8
Faulty comb	10
Fifth toe not pertect in form and development	10
Tenderness on feet	8
Bad colour	16
Crooked breast	10
White in deaf-ear	4
Want of size	18
,, ,, symmetry	15
,, ,, condition	15

Disqualifications.—Wry-tails, or any other deformity. Total absence of fifth toe. Legs any other colour but white, or pinky-white, or with any sign of feather. Other than rose-combs in either sex. Any coloured feathers in plumage. Any fraudulent dressing or trimming of combs or plumage.

4. Cuckoo Dorkings.

This breed is not sufficiently shown to form any reliable scale : but so far as our observation has extended, it may be judged with great accuracy by the scale for White Dorkings, except that either form of comb is permissible ; and substituting for coloured feathers in the List of Disqualifications, "occurrence of white, black, or red feathers anywhere in the plumage."



CHAPTER XXIII.

SPANISH.

THE Spanish fowl is entitled to be regarded as one of our oldest-established breeds, and is even now perhaps more generally known by report amongst the non-fancying portion of the English public than any other. Talk to any man who does not himself keep fowls about your own individual craze in that line, whatever it may be, and it is about ten chances to one he speedily breaks in with the remark that "the Black Spanish is a fine fowl, sir"—that bird is *his* idea of excellence in this direction. In the tenth case it will be the Dorking that is named, and these two breeds represent all that is good in poultry to the average British mind; the splendid large eggs of the one, and the majestic trussed proportions of the other, appealing alike to his "finer feelings," while their antiquity ministers to that respect for hereditary descent which is well known to be one of his favourite weaknesses.

Let it be so; both are good fowls, and can stand under the weight of all the honours which may be paid them. Long before the modern Cochin, or its congener the Brahma, had crossed the waters of the Indian seas, both breeds were bred and valued by English poultry-keepers, though poultry-shows in the present acceptation of the term were not even in existence. Still, however, many private or "club" shows even then took place, being chiefly held in the large rooms of taverns, and mostly confined to some one breed, of which the various amateurs in a neighbourhood thus met to compare their respective achievements, and contend for the pre-eminence in friendly rivalry. By such means the Spanish fowl was raised many years ago to a very high degree of excellence, though differing in several important particulars from the present accepted standards. London was by far the chief home of the Spanish "fancy" in those days; and it is singular to observe how the immense preponderance of black fowls in and around the metropolis at the present time still testifies to the extensive though quiet influence exerted by these unobtrusive amateurs of by-gone days.

With regard to the origin of Spanish fowls, they very probably did actually come to us from Spain. The names of all the sub-varieties—Andalusians, Minorcas, Anconas—point to an origin either Spanish or in the immediate neighbourhood; and there can be little doubt, as Mr. Tegetmeier has justly pointed out, that the cultivation of this breed by the Dutch followed, and was consequent upon, the Spanish occupation of the Low Countries. All about the Mediterranean, in fact, a fowl decidedly of the Spanish type is that indigenous to the country. Minor differences are observable, the legs for instance being found black, white, or (as in the Leghorn) yellow; and the colour of the plumage varies too; but the large comb, the sprightly shape and carriage, the large egg, and the absence of the incubating instinct—those grand points which mark the Spanish type—are found in nearly all, and prove that such well-defined characteristics, however derived, have an antiquity beyond the reach of any attempt at investigation. Even in Algiers, Egypt, and, in fact, all along the northern coast of Africa, the same type of bird extensively prevails, and points almost conclusively to the "Great Sea" of the ancients as the native home of the Spanish fowl.

If this be so, it would be most probable that the bird should come to England from Spain. France is too far north; and though far nearer to England, it is doubtful whether that country had nearly so much intercourse as the Spaniards with the English of the Middle Ages—such intercourse, at least, as leads to the introduction of new varieties. Into the reasons for this we need not enter, though the maritime enterprise of the only nation which ever rivalled England as a naval power at once rises to the mind; and it is sufficient to remark that, from the time when the Black Prince hobnobbed with the Dons in the Peninsula, and a little later, when Drake thrashed them so handsomely at sea, till the more modern days when Spanish and Portuguese wines drove Burgundy out of the English market, there was ample opportunity for the introduction and naturalisation of a fowl which is still found extensively to be the "Spanish" breed of the present day.

WHITE-FACED BLACK SPANISH.—No breed except the Malay looks so high upon the leg as the Spanish fowl; and perhaps even the Malay has scarcely so "stilty" or strutting a gait as the high-bred Spanish cock. The carriage, and the quick and frequent motion of the head and neck, make them very showy fowls, even independent of that white face which is their most striking characteristic, and the size, quality, and shape of which are the chief points in a show bird.

Perhaps no point in any race of poultry could better show what may be effected by long and careful breeding than the face of the Spanish fowl. In every breed—even those in which it is a decided blemish—more or less tendency to white in the ear-lobe is constantly found; and by selecting such birds a pure white ear-lobe might be developed with no difficulty whatever, and has been done in the Hamburghs as well as the Spanish. Whiteness in the face is more rare, but signs of it are observable now and then in nearly all white-eared breeds,* and it is evidently by selecting such specimens that the white Spanish face has received its present striking development. In perfection it should be of a soft and delicate texture, free from black hairs or feathers, and as smooth as possible. Birds deficient in the latter quality are often termed "cauliflower-faced," and though sometimes very showy as chickens, invariably look coarse and rough when older. A good shape to the white, the outline going well back behind the ear, is equally important.

Of the comb we shall speak later on, and only add here that the long thin legs should be as dark a blue as possible, black not being objectionable, though a brighter colour is preferred. The natural tendency of all black fowls is to dark legs, and it is a little odd that many years ago Spanish fanciers demanded pale or almost *white* legs in show birds. These were bred with infinite difficulty and trouble, and legs not pale enough were not unfrequently encased in poultices some days before a show, in order to give the desired pale tint. The change to dark legs has removed one difficulty in breeding a fowl which is troublesome enough at best to produce and show at all approaching perfection; but it is a little remarkable that the tendency to pale legs inherited from the old fanciers still exists. As Mr. Hewitt writes us, just as these pages go to press: "A marked peculiarity of well-bred, thoroughly white-faced Spanish fowls is, the older they are the lighter coloured the legs naturally become, until between the toes of some of the very best specimens that were ever placed in a show-pen the tint was simply a very light lavender. As this arises from age, and not any artificial appliance, whatever may be urged to the contrary notwithstanding, I myself see no reason why this *natural* paleness should not be tolerated."

For the following most interesting notes on Spanish we are indebted to Mr. Richard Teebay, of Fulwood, near Preston, one of the oldest and most experienced breeders. They are specially

* See Mr. Serjeantson's remark on the occurrence of white-face as a blemish in even Spangled Hamburghs.

valuable as showing upon still another delicate breed (as usually considered) the effect of a natural out-door life.

"Having," he says, "been a breeder and great admirer of this beautiful and useful variety of fowls for at least twenty years, though living in one of the coldest and wettest parts of Lancashire, on a stiff retentive clay soil, and finding most writers describe the Spanish as tender fowls, I may be allowed to give *my* experience of their hardiness; for certainly, as they are kept by me, I know no variety of fowl so hardy, except the Brahmas.

"I hatch my chickens in April or May (even Brahmas do very little good hatched earlier here). The chickens are put out with the hen soon after they are hatched, and on no account would I keep them in-doors more than twenty-four hours after. They are put with the hen into boxes about two feet six inches square, having a door in front, with a square of glass in it. Not more than six inches from the bottom of the door I have an opening in one end of the box large enough for the hen to go through with ease, into a covered run, two feet six inches from front to back, and five feet long. The front of this run is open, with the exception of bars one inch wide placed three and a half inches asunder, every other bar of which is made to slide, so that they can be widened as the chickens get larger. The front of the box and run faces the south, and the top slopes to the north. In these boxes and runs the hens are kept during the whole time they remain with the chickens, the broods being placed from fifteen to twenty yards apart, in a large orchard. Each brood is placed near a tree suitable for the chickens to perch in, and in which they *do* begin to perch for the night as soon as they are able to fly up to the branches; and if the branches of the tree are too high for them to fly up to while quite young, I place something for them to get upon so as to reach them. After they begin to perch in the trees, all fear of deaths from their 'going light' or any other disease is over.

"The difference between the fledging of even very small Spanish chicks that roost in trees, and those in the boxes or houses, is most remarkable. Of those roosting inside, some will not be clothed with feathers, except on the wings, at twelve weeks old, and even of those that are feathered at that age, many will be rotten-feathered, and others bare on the neck, and without tails; while those that have been roosting in trees, hatched at the same time, and the eggs from the same parents, will nearly every one be sound in feather and almost as well-feathered as a Hamburgh chick of the same age. Of the broods that roost in boxes, more than half the number (in some seasons whole broods) 'go light'—*i. e.*, become thin and pine away without any apparent cause—some even when half-grown. They appear to take cold with almost every change of weather, or with coming out of the warm houses into the cold morning air. A few will have a very slight cough for several days, others will not cough at all, but gradually lose colour in the comb; and though they will run after food and appear to feed ravenously, they get lighter and apparently smaller, until they begin to droop their wings, and after a time drag themselves along, occasionally falling on the ground, until at last they die. The best and right thing to do is to kill these wasters at the beginning of the disease; for they will sometimes live for months without any apparent change, but never thoroughly recover. This disease of wasting away never happens with me to those chicks that roost in the trees; so finding this to be the case, as soon as the wing-feathers are sufficiently grown, if the chickens do not take to the trees to roost of their own accord, I generally lift them one by one out of the box on a fine calm night into the branches of the nearest tree; and unless it rains the night after they seldom require lifting up a second time, but are ready enough to go up of themselves.

"The chickens that roost out grow very quickly, and are allowed to roost in any tree they like; but a very large mulberry tree is preferred by them to any other. Many of my poultry

friends have looked at this tree and its occupants in the autumn, a little after roosting time, with perfect astonishment. After the first frosty night the whole of the leaves come down, yet the chickens do not change their roosting-place, though there is a shed not more than ten yards from it with perches and boxes, which some of the chickens use when they begin to lay. I may add that the droppings from the birds cause the mulberry to bear the largest berries I ever saw on a tree of the kind. Those that cannot get to the mulberry tree (the part in which it stands being wired off) prefer the hazel pear tree to any other, probably on account of the branches growing more horizontally than those of many other trees. In the winter of 1871-2 fifteen Spanish pullets, with several cockerels, roosted in a very high hazel pear tree, and certainly in the most exposed part of the orchard—indeed, they were blown down by the storms several times during winter—yet they laid more eggs from the first of November to the fifteenth of February than the same number of Brahma and Cochin pullets, ten of which were hatched quite as early. Some of the Brahmas roosted in the same tree with the Spanish, the remainder and the Cochins in the chicken-boxes in which they were reared; all were in the same orchard, laid in the same nests, and were fed with the same food.

"One of the objections to Spanish or any other chickens roosting in trees is, that ever after during life they preserve the inclination to roost out, especially if there be trees they can get into. Another objection to Spanish roosting in trees during winter is, that the frost, if very severe, will blacken the tips of the spikes and sometimes the higher part of the comb, especially of the cockerels; but it must be remembered that even a slight frost will do the same to those that have been shut up in a house, if they are let out early in the morning. Though now many years ago, I well remember going to the mulberry tree when it was freezing very severely one night, and taking three splendid cockerels out of the tree into a building for the night, to keep them from having their combs coloured with frost. The day after the combs of all three turned a livid, unnatural colour; two days after they were quite black, and the wattles nearly the size and shape of goose eggs hanging with the large end down; and, finally, the combs and wattles of all three gangrened, and the birds had to be killed. There were several other cockerels and a number of pullets left in the tree these three were taken from, and not one of these was the least injured, except that one or two were a little discoloured at the ends of the spikes of the combs.

"That Spanish *are* tender when roosting in warm closed-up houses I know; but give them open, airy roosting-places and a free run, and I firmly believe they are as hardy as any other breed, except Brahmas, and if not made too fat, are subject to fewer diseases than any other variety of fowls. My old birds roost in houses that were built for single horses; these have rather large doors, which, with the windows, are always left open day and night, except that the doors are closed every night the frost is severe; at all other times, even in winter, they have nearly as much fresh air as if roosting out. Spanish kept in this way are *not* tender. Even old birds, up to three years old, with me will go through their moult quite as fast as any variety I know, and lay as well during winter as hens of the same age of any other variety. I know well from experience that the treatment Spanish receive to have their faces in show condition would make any other variety tender to a degree. I should not advise any one to exhibit Spanish that have had their full liberty, without putting them up eight or ten days before the show; and even Cochins or Brahmas would suffer quite as much as Spanish if exposed to cold after the treatment Spanish generally receive before exhibition: nay, I firmly believe that other breeds would never bear what Spanish exhibition birds do bear, but if treated in the same way would die of roup, from which disease Spanish is more free than any other variety of fowl.

"For breeding Spanish, the birds should be put together not later than the first of January;

hens in their second or third year being greatly to be preferred to pullets. Not more than eight hens should be put with a cockerel, and four are generally sufficient for a cock in his second or third year; indeed, very few Spanish cocks are to be trusted for early chickens after their first or second year, especially if much exhibited, the eggs from hens running with such cocks being generally clear until the season begins to be warm. There are, however, exceptions to this rule: for I bred five years in succession from the cockerel that was in the pen which won the silver plate at Birmingham, in 1859, for the best pen of Spanish in the exhibition. This bird was the winner of a great number of prizes, being successfully exhibited till over four years old; he was stated by Mr. Hewitt and other judges to be the best Spanish cockerel ever exhibited up to that time, and I have never seen his equal since. I kept him till seven years old, and his eyesight was perfectly clear to the last; but, as just observed, in this case there was no fault to find with his services as a stock-bird, in spite of his exhibition triumphs.

"The chickens, to make large birds, should not as a rule be hatched earlier than the middle of April; those hatched earlier may win a few prizes at the summer shows, but are worthless and appear stunted later on in the season, when the April hatched birds go past them, and make much finer specimens.

"Spanish chickens are generally put in warm, close houses, and fed principally on soft food for eight or ten days before they are sent to an exhibition, and generally before being sent off have the small hairs on the white face drawn with a small pair of tweezers. The face, comb, and wattles are then washed with common brown soap and slightly warmed soft water, using a very soft sponge. This is all young birds require. Old Spanish for exhibition require to be kept in small yards, and the less sun or wind reaches them the better. When old birds have their free liberty, and are exposed to the sun or to dry cold winds, especially in the spring of the year, the white faces of even the best birds will become streaked with red, and some cocks will turn quite pink on the upper part of the face; yet if these very birds are penned in small yards where there is little wind or sun, their faces will keep beautifully white. Old birds that have had their free liberty require to be put up in a close and rather warm house for at least three weeks before exhibition, to bleach their faces and soften the white, as well as to clear their faces from any 'yellow' they may happen to have on them. Some exhibitors prefer to put them up in a rather dark place, which certainly will clear the faces sooner; but it often bleaches the comb and wattles as well, so as to make them look quite sickly; and by taking a little more time there is no need for it. I may here ask again, What other variety of fowls could bear the above treatment, repeated time after time, without becoming tender? nay, would any other bear it without becoming diseased?—yet even this is not all that exhibition Spanish sometimes have to bear.

"Some of the largest-faced Spanish have their faces very much disfigured with hair-like feathers; and these are drawn out by tweezers, leaving an arch above the eye near the comb. Sometimes they are drawn out so close up to the comb as to make the bird look quite ridiculous. Though these feathery-faced birds, especially the hens, have often very large faces, there are many objections to them; for even when trimmed by an expert, the feathers left near the comb are so large as to make the bird look unnatural. Again, every feather drawn from the face leaves a black mark in the hole the feather has been drawn from, and these make the face look very dark, and quite unlike the pure kid-like white face so much admired. Many years ago I tried, by breeding from the naturally clearest-faced birds I could get, to produce Spanish as free as possible from hairs on the face. I found that it could only be done by repeated in-breeding; but by so breeding I ultimately procured many birds as clean and apparently free from hairs as could be wished for. These neat-faced birds, had, however, always the *smallest* faces, and consequently were of little use

to exhibit; but the cockerels were exceedingly useful to breed from with the larger-faced hens of other strains.

"The combs of the cocks as now generally exhibited are very much too large. Nearly all these large combs have to be supported by cardboard, wire, or some other apparatus, put on to keep them upright. Such overgrown combs may occasionally be seen at exhibitions with very small holes through them, showing where a thread has been through to fasten the cardboard or whatever else has been used to keep them straight and upright. The worst of these large combs is, that during the confinement before a show, or even during the exhibition itself, they become larger and softer, and fall over; entailing almost continual punishment on the bird by his having to wear a head-gear he does not like, and endless trouble and disappointment to the owner, besides vexation to the judge—for the latter occasionally finds he has given perhaps the first prize to a bird which, though he carried his comb as straight and upright as possible when he awarded the prize to him, only a few hours after carries it entirely on one side.

"The face of the cock should be entirely free from coarseness; for in the very coarse, lumpy-faced birds, the white as they get older will close up the eye so as to prevent a bird from seeing. When this arises from the white *under* the eye getting so puffed out as to prevent the lids from opening, a piece of the white may be cut out, so as to allow the eye to open freely. Cockerels with the white over the eye running to an angle towards the back part of the face, have very often the sight destroyed in the second year by the white *over* the eye growing down. As this part cannot be cut without disfiguring the bird, a piece of thread is put through a small portion of the white above the eye, passed close to the back of the comb over the top of the head to the other side, and through a corresponding portion of the eye there; this is then tied so as to raise the white on both sides, and leave the sight unobstructed.

"The Spanish cock's beak should be long and stout, and of a deep horn-colour. The comb should be bright red, single, firm, and well set on the head, so as not to shake about—thick at the base, and so gradually thinner to the edge; perfectly erect, straight, and free from twist either in front or any other part. It should rise from the beak between the fore-part of the nostrils, and extend in an arched form over the back part of the head, the under part at the back almost touching the top of the neck. It should be deeply serrated, the serrations beginning about an inch from the beak, and being small in front, gradually increasing in size until they reach the higher part. The head should be large altogether, being both long, broad, and very deep-sided; the eyes large, perfectly free, and open. The face and ear-lobe should be of the purest white, and the texture soft and delicate, like the finest white kid; smooth, and free from ridges or folds, the sight being perfectly free, and not obstructed by the white. The white should reach well on to the beak in front, and rise over the eye close to the base of the comb in an arched form, and extend well towards the back of the head, the further over and behind the ear the better, and continuing to extend, without any break in the line, towards the back of the upper part of the neck. The ear-lobe also should be as long, broad, and open as possible, spreading out on the neck perfectly free from folds, and hanging down very low; not in any degree narrowing to a point, but preserving its width well until neatly rounded on the bottom; coming up again in front of the neck, and joining the wattles, which last should be bright red, long, and thin; the inside of the upper part and the skin betwixt, or throat, white.

"A good Spanish cock is something to be proud of; in shape and carriage there is no fowl except the Game that can equal him. The neck is rather long and gracefully arched, with the hackle abundant, and reaching well on to his shoulders. The breast is prominent and most beautifully rounded, and the body neatly narrowing to the tail, with the wings close up to the body. He

carries himself proudly and rather upright, giving the back a neat even slant to the tail, which is amply adorned with fine curved sickle-feathers, and is carried rather upright. The thighs and legs are long and neat, the latter being of a dark leaden blue; and the whole plumage is of the richest and most glossy black, with a beautiful metallic lustre on the higher parts.

"In the Spanish hen the beak is also of a deep horn-colour, or nearly black; but the comb though large, single, and deeply serrated, falls entirely over one side of the face. The face resembles that of the cock, but is smaller; and the wattles in the female sex are preferred small and thin. The larger the face is the better, if fine and free from ridges or coarseness; and there should be no apparent division between face and ear-lobe. The shape of the hen is very graceful, and much the same as in the cock, allowing for the usual difference in the two sexes.

"Spanish sometimes moult with the feathers on the head and thighs tipped with white. This is generally owing to the birds being too fat. *No bird will moult well if too fat;* and even old Spanish will go through the moult as quickly as any other breed of fowls, if they are made to procure most of their own food for a few weeks before moulting-time.

"Old Spanish cocks during the exhibition season are best fed almost entirely upon soft food."

Mr. Teebay's recipe for "keeping Spanish in good condition" will make many of the best known exhibitors hold up their hands in horror; but Mr. Martin kept his at Linton Park exactly in the same way, many of them roosting in the trees; and we can testify from personal observation that the results were precisely as here stated. We by no means, however, advise that every amateur who has convenience for doing so should turn all his birds out of doors forthwith; the result of such rash procedure would of course in all probability be the death of the whole lot from roup and other pulmonary complaints. All such changes in treatment, whenever made, should be made *gradually*, and such out-door treatment as here described rarely answers except the birds have *very wide range* On these conditions, there is no doubt whatever that it will surpass all other methods of keeping poultry in condition.

One great merit of the Spanish fowl, however, is the ease with which it may be kept in confinement; and in such circumstances the treatment will necessarily be somewhat different. We have seen magnificent specimens which had rarely been out of a pen only a few feet square; though it is by no means true that birds will do as well with such accommodation as if allowed better. When bred in anything approaching confinement, the chickens are unquestionably very delicate, and require special care. We have seen many which at six weeks old were perfectly *bare* of feathers, yet were in perfect health, and likely to make valuable birds. Dorking hens are to be preferred for hatching them, as they remain with them longer and brood them better; but if such cannot be had, the simple "artificial mothers" described at page 75 will give valuable aid, and are soon resorted to by the little naked and shivering fledglings as often as the desirability of "a warm" makes itself painfully felt. In very early broods a moderate amount of artificial warmth is desirable, though a perceptible stove-heat, such as we have felt ere now on visiting a Spanish chicken-house, is in our opinion more injurious in the long run than even an entirely unaided temperature would be. It is often found that good old ale to drink, and meat given pretty regularly, are great helps to the fledging of Spanish chickens which have to be reared in confinement, though we are not partial to such regimen as a general rule.

Living as we did for many years at the very head-quarters* of the Spanish "fancy," we had

* The city of Bristol has now for many years been known amongst poultry-fanciers for its fine strains of Spanish fowls, a result which very remarkably shows the great influence which may be exerted by a single successful amateur; being almost entirely owing to the sound judgment and perseverance displayed many years ago by Mr. Rake. This gentleman spared no pains or expense in collecting the best stock that could be procured, and was for a time perfectly invincible. Other amateurs in

many opportunities of seeing the fowls under all circumstances, and of observing how they were managed. A grass-run was always preferred where it could be had, but the majority of the birds were kept in confinement, and generally under cover during severe weather, the houses being boarded up for two or three feet in front, so as to keep off cold winds. In these circumstances they were nearly always in tolerable show condition, except when moulting, which was a very slow process; but all the Bristol fanciers we were acquainted with used to keep their birds in a "dark house" for about a week before showing. These places were not absolutely dark, but enough of what might be called "twilight" was allowed through a small window to enable the birds to see their food and water, walk about, and fly up to their roosts. In the best of these dark houses there were pens about seven feet from front to back, by four feet wide, the partitions being boarded up about four feet high, and netted thence to the roof, so that the whole was well-ventilated and airy. Confinement in such dark pens has a great effect, not only upon the faces, but also on the plumage of the birds, making it clean and glossy; and we never remember seeing the combs blanched as described by Mr. Teebay, unless the darkening had been much too long continued, or overdone, or the birds had been so closely penned as to be unable to move about. Occasionally they would be let out for half-an-hour on a grass-plot if the weather was dull and mild, but never in the sun "while a show was on." Heat was rarely used except in really cold weather, being found to cause flabbiness in the comb, and to endanger the health of the birds on their journey afterwards.

Few exhibitors showed their birds in better condition than Mr. Roué (who has lately retired, but whose stock founded one of the best existing Bristol strains), and we found no difficulty in obtaining from him at any time such information as we desired. He always found it best to feed for exhibitions chiefly on barley-meal and bread and milk, with only a small portion of whole corn, the bread and milk being found to "suit the faces" well; and he always made a great point of accustoming the birds to small pens, such as those in which they would have to be shown. We have already treated generally of this matter; but in the case of Spanish it is peculiarly necessary, as birds unused to the confinement are always poking their heads between the bars or wires when penned, and, by getting rust or dirt on their faces, spoiling their chances in a close competition, the least dirt showing very disadvantageously on the pure white of the face.

The faces have in the main to be "bred up to;" but in every fowl it is necessary to go over the whole carefully, and pluck out with fine tweezers all the "fluff," or small hairy feathers, which are more or less dotted over the surface. This is done by seizing each hair as close to the skin as possible, and plucking it out with a sudden jerk. The white then shows up well, and when the operation is completed the whole is carefully and gently washed with soap and lukewarm water, using for the purpose a very soft sponge. Every man washed his birds in his own way; but Mr. Roué himself constructed a saddle on which the birds were strapped down, and which is likely to be so generally useful in the case of many other varieties beside Spanish, that we have much pleasure in giving the following description and representation of it, from notes and drawings which the inventor has kindly sent us.

the neighbourhood followed his example, and when Mr. Rake finally retired his stock was eagerly bought, the best portion of it remaining in the city. After him Mr. Roué bred birds which perhaps have never been excelled; and the names of Messrs. Lane, Parsley, Jones, Hyde, and others, are or have been all well-known as winners in Spanish classes. At the Bristol Show in 1867, the Judges distinguished four pens in the catalogue (all exhibited by different Bristol amateurs) as "the four best pens of Spanish *ever seen together*." The foundation of all these Bristol strains, however, was in the excellent stock already referred to; and we were interested to observe that only a few years ago, at the sale on retirement of another breeder (we think in 1869), "an old Rake hen"—if we may apply such a term to the gentler sex—was bought apparently for the egg or two she might *possibly* lay, since there could be little probability of such an event in the case of a fowl which could hardly have been less than ten or twelve years old. Since 1871 Bristol has not stood so high, several metropolitan and other exhibitors having established a dangerous rivalry.

"Its invention," he says, "occurred in this wise. Being obliged, for exhibition purposes, to wash and trim my birds' faces pretty often, which entailed the time and expense of a boy or other assistant, who not only witnessed all that took place, exporting all my little secrets to quarters they were never intended to reach, but whose interest in the performance would often make him forget he was holding a living thing, till a sudden flap and kick gave notice of freedom, and off the bird went, to be re-caught before the operation could be finished; I found all this a great annoyance and loss of time, and determined, if possible, to stop it. I then tried the bird in my lap, with the breast-bone between my knees and the legs down between my own; but this at first was an utter failure, for off it went at a bound, upsetting all my little apparatus of cups, basins, sponges, &c. I thought that was not much improvement, and would not do; so I re-caught the young gentleman and quietly put him back as before, but this time passing my handkerchief over his back and

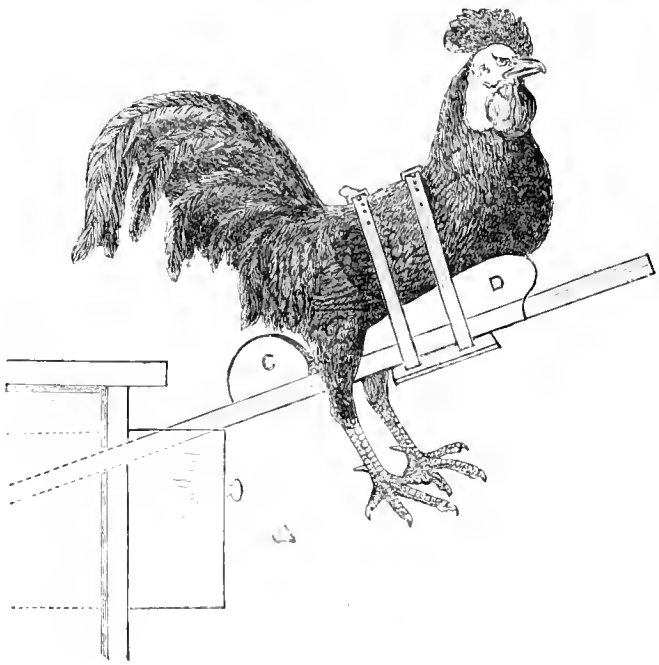


Fig. 79.

Fig. 80.

round my own thighs, tying the two ends underneath. This was a perfect success; the bird was comfortable, and never once evinced a desire to move; and all went on swimmingly until his toilet was just completed, and only wanted the finishing touch of the *powder-puff*, which I had left out of reach; when my attempt to obtain it proved with some force that I was as helpless as the bird, both of us being bound together.

"Thus I was led to invent what I called a cock-saddle, of which a side view with the bird on it is shown in Fig. 79, and a plan in Fig. 80. It is simply made as follows:—Take a piece of inch deal, five inches wide and about two feet long. About the middle of each edge cut with a saw at right angles, to the depth of one inch and a half; and five inches from this direct the saw diagonally to the bottom of your preceding cuts, thus taking out of each edge the triangular notches A B in Fig. 80, which are for the bird's legs to hang down in, similar to a saddle without stirrups. Immediately behind the rectangular cuts, and entirely across the board, nail an oval pad—horsehair in leather or calico will do—about three inches in height, four or five inches in width, and

about seven or eight inches across the board, bringing it carefully, with part of the padding, over the rough-cut board. From the front of this pad, C, measure the average length in the body of the breed you keep, and nail two other pads or rolls, D, of this length, tapering from four inches wide backwards to about two inches at the other pad, nailing on the edges and centre of the board, so as to represent, as near as may be, your thighs put close together.

"To put the bird on the saddle, take him under the breast with the right hand, and stretching out his legs horizontally behind with the left, drop him quietly on to the saddle, so that the breast-bone comes between the two rolls or pads, and slipping your right hand away in the direction of the feathers (*i.e.*, towards the thighs), bring it quickly on the bird's back. When you have him thus, release one of the legs from your left hand, placing them one at a time in the notches prepared to receive them, and taking care to keep the bird well back against the cross pad C, so that it has no room to slip back from the straps. These straps should be two in number, one passing over the pinions of the wings, and the other over the short flights and rump. The buckled ends should be brought to the top, and be connected by a short strap, say three or four inches long, to prevent them parting too far asunder, and so slipping off altogether; and to prevent them slipping in the same way under the board, screw on the under side for each strap to pass through the guide of a common thumb-latch. Draw the straps so that the bird shall be at ease and have plenty of room to breathe, but no loose space to slip about in, drawing the one over the pinions first. If properly done the bird will be in a most comfortable position, and can remain so for hours without the slightest distress. My saddle had no stand. I used to draw out one of the drawers of a dresser about three inches, and insert the tail end of the saddle as shown in Fig. 79; then it could be easily moved from side to side, or by pulling the drawer in or out, could be set higher or lower as required.

"Some may think that this arrangement would distress the birds, but I can assure them that after the first two or three times they seldom make any attempt at movement; finding the use of their legs gone, they appear perfectly tame and helpless in your hands, which are therefore free for use. In fact, after my old birds got used to it, I found I had hardly ever to use the straps at all, but when put on the saddle they would keep quiet of themselves. Finding such ease and comfort in the plan, I took to giving my best birds a *daily* washing of face, head, and feet; and they became so tame and used to it that they would allow me to pick them up in the yard at any time except when feeding. One old cock in particular—a great pet of mine—which had been used to the saddle for two or three years, on my projecting it for use from the old dresser in my stable, used to jump on the dresser top, and give a lusty crow and flap of the wings, as much as to say, 'Now for a good wash.' He would then eye me inquiringly, which I took to mean, 'Are you going to put me on?' and if I still hesitated would step on to the saddle and then wait a few minutes in a sort of forlorn mood, till at length he brightened up and called to me just as if to his hens, at the same time making sham pecks at the pad, as if thereon lay a most delicious morsel if I would but come and see. I waited one day to see how he would conclude the ceremony without a wash. After various marchings up and down the old dresser, off and on to the saddle, calling, crowing, &c., it terminated in his attempt to mount or rather descend to the saddle without assistance. The attempt I must say was a very sorry affair, for after trying first to put down one leg and then the other for a score of times, he made an indescribable attempt to slip down both at once, which brought him quickly to the floor. He was on his feet in a moment, looking round wrathfully indignant; when his eye caught the saddle and he flew at it as if at another cock, with his spurs in the air. Being too high, he did not reach his aim, but found himself on his tail again; when he rose in a rather stately but subdued style, and slunk off the scene, looking thoroughly disgusted with me, the saddle, and himself."

Bred in confinement as they were, many of the best birds often showed a tendency to fall over in the comb, and needed artificial help. Mr. Roué invented a mode of fastening the "wire" which is still employed by the Bristol fanciers, who would consider such a hole in the comb as mentioned by Mr. Teebay a regular piece of "bungling," irritating the bird, as well as being very apparent to a critical eye. Mr. Roué's support is represented in Fig. 81. The wire is all made in one piece, the centre of which is at A, at the back of the base of the comb. The part from A to B is shaped to fit the base of the comb and top of the skull, when drawn forward as far as the comb will permit; then the corners B must *exactly* reach the nostrils, whence the wire curves upward and back on each side, at a height which just reaches to the base of the spikes in the comb, and reaching far enough behind to clear the comb entirely. This wire is bound round with thread or silk to prevent sores. In putting on, the cartilage between the cock's nostrils is pierced with a needle, which does not appear to give any pain whatever, the part seeming devoid of feeling, and being in fact little more than a thin horny plate. The base, A B, of the wire being then firmly bedded on the head, and drawn forward as far as it will go, a bit of wire is passed through the nostrils and corners B, to which these corners are tied tightly up on each side; and the whole

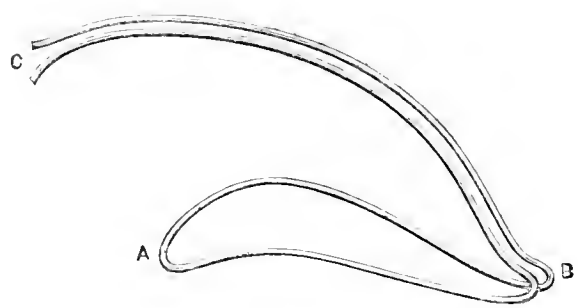


Fig. 81.

is completed by tying the ends of the wire C loosely together behind the comb, carefully avoiding any painful or uncomfortable "pinch." A wire thus put on does not appear to distress or even annoy a bird in the least, while it is quite as secure as one fastened through the comb itself, if carefully fitted and adjusted. The wire was invented originally for use during sickness or moulting, when the comb often shrivels up and falls over, and sometimes never recovers its original beauty. It was kept a secret for some time, but somehow leaked out and became the property of others, being often abused to an extent never contemplated by Mr. Roué, and largely used to support combs which would have been hopeless without such assistance. Many birds required it pretty frequently, especially when returning from a show; and we can remember one cock in particular, which won almost everywhere some years since, and which rarely had the wire off *except* when at exhibitions, or got ready for the inspection of some other amateur: his comb "would stand about a week"—just long enough for a show—and no more. This bird was an example of the fault referred to by Mr. Teebay, the comb being too large for just proportion, to which no doubt the weakness was attributable. Used as designed by the inventor, for temporary support during critical periods, we can testify from personal observation that such a wire as figured above is of the greatest utility—but we have long since been equally convinced, from what we have seen in various yards, that the extensive use of such artificial helps—or rather, we should say, the abuse of them—to assist naturally flabby combs, rather than the careful attention to breeding good ones, always reaps its legitimate reward in the perpetuation

of a weak-combed race of birds. We are sorry to say it came within our personal knowledge that on one occasion an exhibitor, having a fine cock with a comb very much too large for any legitimate treatment, cut off the edge and deliberately *cut fresh spikes* in the mutilated member; but we ought to add that this piece of barbarity was indignantly censured by every one to whose knowledge it came: and—what is perhaps more to the purpose, should these pages fall into the hands of any more such gentry—the "experiment" itself was a decided failure, the new serrations being, on account of the natural thickening of the comb towards the bottom, too clumsy to appear in the show-pen with any chance of success.

Besides this fault of being too large, the most frequent blemish in a Spanish comb is a slight twist or curve low down the front, returning at once to the true middle line, and the main part of the comb being perfectly true and upright. This fault often appears during growth, to disgust and disappoint the hopes of the amateur; and one form of it is well known under the name of a "thumb-mark." As birds with this blemish often have beautiful faces, they are not unfrequently employed for breeding pullets; but the result of such a proceeding is invariably to give much future trouble, as nearly all the cockerels bred afterwards from hens of such a strain will probably show the fatal defect. Slight cases may sometimes be cured if treated early, by bending a piece of stiff cardboard, and fixing it with any very strong adhesive plaister, so as to enclose the front of the comb between the two leaves of the card; also by the wire just described.

It was formerly the fashion for the cock to carry *his* comb over on one side, somewhat like that of the hen; and the remains of this tendency no doubt add to the difficulty of breeding combs perfectly straight and upright now. This point is another good illustration both of the "changes of fashion" in poultry attire, and of the power man possesses over these and other circumstances. The mandate went forth that "combs were to be worn" upright in future, and forthwith breeders produced birds answering the required conditions; so that the difference in the carriage of combs is now fixed as a sexual distinction. We have seen very singular misapprehensions on this point, and once in particular observed an advertisement of an upright—or "prick-combed," as it is called—Spanish hen, which on account of this well-known blemish was stated to be "invaluable for breeding cockerels;" whereas very careful experiment years ago has conclusively proved that while breeding from such hens ruins a strain entirely for breeding pullets, it is not a whit better for breeding good combs in the cockerels, or rather is decidedly worse, almost always producing combs which are not only so much smaller as to be often *too* small, but generally very ugly in contour, wanting that fine arch which is so great a beauty. Were it understood that the different carriage of combs is now become a sexual mark, just as the difference in tails, such absurd mistakes would not be made.

It is, however, quite possible to influence the character of the future combs much by a really judicious selection of stock. In the male parent a moderate size should be chosen, combined with as thick a base as possible, but tapering off to a fine or thin edge. In the hen the same points of a thick base and thin edge should be sought; and it will be found that such combs often seem to stand up a little from the head at the base, as if intending to grow upright, but quickly fall over with a clean arch or sweep, the front edge presenting one smooth curve, free from duplicature or waviness. Such are the combs to be chosen as likely to produce what is wanted in the cockerels, avoiding both those very large, weak, and flabby combs which fall "dead over," forming almost a sharp angle with the skull, and such as seem to have so much front edge as to be waved or twisted in the outline; the first of these being likely to breed large and falling combs, and the second twists or thumb-marks in the front.

During the moult the combs of Spanish fowls shrivel and shrink to an extraordinary degree.

At such times the combs of first-class hens will often assume a small and upright or "pricked" character, and must not be condemned on that account, as a return to good condition will make them all that can be desired.

The white face and ear-lobe are rather apt to become disfigured by a dirty yellowish eruption or scab, which greatly diminishes the chances of birds in competition, and is also somewhat dangerous, as it occasionally tempts birds to peck at each other's faces. We have known this occur in several instances, and, though we are not sure, believe that in all, with but one exception, there had been signs of eruption previously. In the exceptional case the best cockerel of the year at Birmingham was shown afterwards with a first-prize pair of pullets, we think at Manchester, when the pullets, or one of them, devoured one of the cock's ear-lobes entirely, and the other partially, spoiling the bird entirely for show purposes. In this case the face was in faultless condition, and the mishap could only be attributed to impatience under confinement with a strange mate, the pen having only been put together a day previously. The eruption now referred to is usually a consequence of over-feeding. Incipient cases may sometimes be checked and cured by reducing the diet and bathing the affected parts gently twice a day with milk and water; but generally, and especially if birds have to be "got right" for a show, it is better to treat it regularly, by giving a tea-spoonful of castor-oil every three days for three or four times, and bathing the faces with sulphurous acid (pharmacopœia strength) diluted with its own bulk of water. The use of this preparation, though known to very few, has probably given rise to the opinion we have heard expressed as to the "atrocious cruelty" to which Spanish are subjected by having their faces prepared with "strong acids." We can only reply that the acid in question is the very same which is used to cure colds by injection into the throat in the form of spray, and is absolutely tasteless. Its effect, if patiently persevered with, is very marked on the eruption referred to; but the faces must be carefully and gently dried after each application. Dryness of the face is, in fact, a very great point, and the dusting of a little violet-powder, or what is much better, finely-powdered oxide of zinc, between the folds, is of much advantage, helping also to bring out the white of the face nicely. The advantage of the zinc is that it never clogs or cakes with the moisture of the skin, as violet-powder is rather apt to do. We have known exhibitors actually paint faces, especially if an otherwise good face has a reddish place over the eye; but such frauds are generally discovered if the judge has proper time allowed him, by the harsh and rough look of the skin thus treated. We need scarcely say that all dishonourable practices of this kind should be visited with ignominious disqualification.

It was formerly considered fraudulent even to "trim" the faces of Spanish fowls, by plucking out the hairs as described, and birds so treated were disqualified; but by degrees the plan became so openly recognised and acknowledged, both by exhibitors and judges, that any pretence of fraud is perfectly ridiculous. We believe the reason in this case to have been, not that exhibitors desired an unfair advantage, but that the full beauty of by far the greater number of Spanish faces cannot be seen without such trimming. Some years after the general recognition of the practice in England, one or two breeders kept up an unavailing protest against it, and refused to trim their birds, with the result that they were always hopelessly beaten. At length one of the most prominent objectors, Mr. Alfred Heath, publicly announced that, being convinced the case was hopeless, he should henceforth himself adopt a practice he found to be general; on the understanding it was *not* to be considered fraudulent; and we believe on the very next occasion of his exhibiting he won a cup. Some time after he wrote to us saying that after trial of the new plan he prefers it; that he had never seen the full beauty of his own birds before, and does not think it can be seen without; whilst with the present clear and open understanding the objection

he formerly entertained is entirely removed. We have thought it well to state these facts in order to remove any misapprehension which may still prevail, and to make it perfectly clear that no breeder, exhibitor, or judge now considers the faintest semblance of fraud to attach to the practice referred to. It is only necessary to state that a proper fringe of feathers, which is always found naturally in the very best birds, should be left at the top of the face, between it and the comb. To trim this away is to impart a very unnatural appearance, which, as Mr. Teebay says, is "perfectly ridiculous," and which on *this* ground, and not on that of fraud, is still occasionally visited with the penalty of disqualification. This point being of some importance, Mr. Hewitt has very kindly given his views on the subject, which may prove of assistance to those who wish to know "where they must draw the line." His remarks will also make clear the curious fact, that in this case the recognition of the custom has been literally forced upon the judges against their own will by the great body of Spanish exhibitors, contrary to the opinion often so freely expressed that the fault rests with them. It is in truth plainly manifest that the origin of the practice was in the improvement which it will be seen all agree in stating can thereby be effected; and all that can now be done is to define what is legitimate as far as possible, and keep it within proper limits. Mr. Hewitt's observations on this subject are as follow :—

"Among the many vexed questions arising out of our poultry exhibitions, none perhaps have equalled the disputes arising from the trimming of the faces of Spanish fowls. I, for one, admit it would be well if this plan was discontinued altogether; but although discountenanced by the judges generally, the difficulty even now is to find a pen in large classes in which the faces have not been more or less cleverly subjected to this treatment. It should be borne in mind that trimming, however artistically carried out, can never make an indifferent specimen of the Spanish fowl into a *really good* one, but, on the contrary, often brings to light blemishes that were best hidden; at the same time it is equally true a really first-class bird is capable of very great improvement to the eye, when submitted to the hands of a careful and practical trimmer.

"As I have before hinted, it would be far better if trimming, even of Spanish fowls, could be done away with altogether: but as many years' perseverance on the part of judges seems of so little avail, it may be well to point out where by going *too* far, otherwise excellent fowls have been either simply passed by without remark of any kind, or disqualified altogether.

"It has often been found that even the whole line of feathers between the eye and the base of the comb has been entirely removed, or, as is still more general, trimmed off to an abrupt line over the eye, leaving perchance some portion of the part thus denuded of feather in a most unsightly condition, bringing confusion to the prospects of the exhibitor. On the other hand, a good white face may, in many instances, be wonderfully improved by the extraction of the few scattered hairs which naturally exist (more or less) in the faces of the most perfect Spanish fowls.

"It is one of those questions to which no general rule seems to apply. When officiating with some of the most noted arbitrators of the day, the question has often arisen between two pens, one trimmed, the other not so, whether the naturally shown pen could not in the hands of any one of us 'be made to look quite equal to the other;' and taking this plain view of the matter, the award has been given in favour of the untrimmed pen; but what is certainly most discouraging, public opinion, formed on a hasty glance of relative excellence, has usually in such cases been opponent to the decision."

We may add to the above that the open toleration of the practice of trimming Spanish faces is by no means an unmixed gain, since it has to a great extent obliterated the distinction between *naturally* good and clean faces and those obstructed by feathers. When birds were shown naturally, fanciers *bred* them to such perfection that little was required; and we still see now and

then faces which scarcely need a hair or feather to be pulled over the principal surface, though capable of enlargement in size under such manipulation. Such birds are now exceedingly rare, trimming having taught breeders to rely upon the tweezers for what they used to obtain—with what difficulty they only know—by care and judgment in mating their stock.

We may also add that the ear-lobes shown of late have been by no means equal to those seen formerly. We have frequently seen them in former years all that could be desired, being perfectly open, flat, and free from folds; but lately we have scarcely been able to find a bird anywhere whose lobe was free from folds, wrinkles, or duplicature. The fault has arisen from a too great regard to mere *size* of face and lobe, apart from shape and quality; and hence may also be held to have some connection with the general adoption of trimming already referred to.

Mr. Teebay has already alluded to the difference in "quality" of faces. Various yards have very marked peculiarities in this point, and the celebrated strain of the late Mr. Lane, of Bristol, which at one period won more prizes than any other, was of the rough or "cauliflower" type of face, though the surface of white was extraordinarily large. There can be no doubt, however, of the superior beauty of the soft and smooth faces, and Mr. Lane himself, for a year or two before his death, had been transforming his old strain to this character by judicious crosses, and had to a considerable extent succeeded when death dispersed his yard. There appears little doubt that all the older English strains were of the rough-faced type, and that we owe the smooth faces to subsequent importation from the Dutch fanciers. These Dutch birds, however, had faces much *smaller* than the English, singularly corroborating Mr. Teebay's experience of the effect in *diminishing* face of in-breeding to get smoothness; and very much careful breeding was required before the quality of the one was to some extent engrafted upon the size of the other. This was the great secret of Mr. Rake's success, his sound judgment in crossing enabling him to show smooth faces of greater size, or large faces of finer quality (whichever view be preferred) than all his competitors; and though a final defeat caused him ultimately to retire, we believe that in point of fact this defeat was really inflicted by his own stock.

In breeding Spanish, and especially in crossing different strains, the most satisfactory results will usually be found to follow by putting the smoother-faced cockerels (even if the face be small, to the large and rough-faced hens, than by adopting the contrary plan. Perhaps no breed, however, bears crossing so ill as the Spanish; the result of crossing even first-rate strains, if very alien blood, being, as we have elsewhere seen, often the apparently unaccountable but most disheartening deterioration of face in every point. Recrossing back to one of the parent strains will, however, generally remedy this in the second generation; but still it is very desirable, by preserving distinct families and noting pedigrees, to avoid, as far as possible, crossing at all from an entirely alien yard.

It is very difficult to foresee the ultimate quality of the young chickens. The very best are often the longest in showing their good points; and indeed, as a general rule, those which show very white in face at an early age rarely turn out first-rate specimens. One of the most experienced breeders we ever knew had on one occasion actually given orders in October for a cockerel to be "potted;" but his "man" thought differently, and kept him on a little longer, chiefly however on account of an uncommonly beautiful comb; and this very bird during the next two months picked up "hand over hand," making ultimately the champion cockerel of his year. Birds which show a plain blush or red as chickens, however, may be discarded without hesitation; and in general those which present a dark, dirty blue appearance when young, with a very slow but steady change to white as they grow older, make the best specimens. Very promising chickens will however, often show the fatal red over the eye as time draws on; and only the most careful

selection of stock, rejecting every bird for breeding which shows the faintest trace of red, will keep a yard up to a high standard.

Spanish fowls, as they become old, not unfrequently moult out with many or all of their feathers tipped with white, presenting a curious "magpie" appearance, not unlike some strains of Houdans. This is no evidence whatever of any impurity of blood, but seems strictly analagous to the advent of grey or white hair in the human species. Such birds will produce chickens (so long as their prolific power lasts) quite as perfect as those which remain quite black. Occasionally they will moult entirely white instead of pied; and even *young* white birds are sometimes produced. Some of these are what physiologists term "albinoes," having the pink eyes of that peculiar physical disposition; but others merely show the frequent change from white to black and black to white which all the feathered tribes often present, and by breeding these carefully the White Spanish has been produced.

The only other variation in plumage necessary to notice is the occurrence of red or reddish-golden feathers, more particularly in the cock's hackles. We have always noticed that birds thus disfigured were of the richest and most glossy colour in the yard,* and we never knew a yard at all noted for rich and glossy plumage in which such birds were not every now and then produced, This is, in fact, the case with *every black breed* of poultry, the least-established (such as Black Cochins) of course suffering most from it, and varieties so long and carefully bred as the Spanish being to a great extent free; but the tendency still exists in all, and is always manifesting itself more or less. We mention the matter partly because Mr. Darwin has on this point made another of the mistakes regarding the facts of poultry-breeding to which we have already referred, stating† that "all who know anything of the breeding of poultry will admit that tens of thousands of pure Spanish . . . . have been reared without the appearance of a red feather;" whereas, all "who know anything" are aware that the fact is precisely opposite, and that these red feathers are just what are constantly observed. Of course, tens of thousands of birds free from them are bred, and only such are preserved and shown; but out of the *whole* "tens of thousands" bred by any number of fanciers many birds with red feathers may be seen. Such should not be bred from, if it be possible; and by insisting on this rule they may and ought to be reduced to a mere per-centage. By adopting a contrary rule, a race of *red* Spanish might probably be produced without much difficulty, if such were desired.

Coming, as they generally do, from close confinement, Spanish require specially good protection on their journey to and from any show. Even the coarse unbleached linen or canvas generally employed to line poultry-baskets is scarcely sufficient if the weather is at all bad; and most Spanish fanciers of our acquaintance prefer to use flannel. This should be well shrunk before being employed, which swells the fibres, and affords very efficient protection from cold and draught, whilst still giving efficient ventilation. It is also necessary to have the basket sufficiently high to prevent the cock by any possibility knocking his comb against the top, which would probably cause damage to one or more of the spikes.

The laying qualities of Spanish are well known. High breeding has within the last twenty years perceptibly diminished the good qualities of many strains, but enough still remains to justify a very high character as layers, about 130 eggs per annum being an average many birds will attain, if properly fed and managed. The egg is very large, with a smooth white shell, both of which qualities cause it to command a good market; but it must be admitted that to most palates

* The Rev. W. Serjeantson's notes on Black Hamburghs will be found to corroborate this exactly, from his experience of another breed.

† "Variation of Animals and Plants under Domestication."

the flavour is far inferior to Cochin or Brahma eggs, the yolk being smaller in proportion, and rather insipid, the chief bulk being made up of albumen or white. On the other hand, this very absence of flavour causes their eggs to be preferred by many invalids and other persons of delicate appetite. The pullets usually lay at or before six months old, and will continue through the winter, but the hens rarely begin till January; after which however they rarely stop more than a day or two until the autumnal moult. The appetite being only moderate, and the birds bearing confinement well, and never giving trouble by any sitting propensities, they make a very useful and profitable variety for urban or suburban poultry-keepers, who wish for a fowl which combines with these qualities an always creditable appearance. Perhaps no breed will answer these conditions better than the Spanish, with the added possibility of enabling their owner to exhibit with credit, even though very small space be at his command.

Though non-sitters, instances occasionally happen, when kept at large so that hens can "steal their nests," of Spanish hens brooding steadily, and bringing off good clutches of chickens; but we never knew this occur under any other circumstances. This fact throws a curious light on the probable origin of non-incubating breeds, which it is most likely were gradually formed by the regular abstraction of eggs postponing the gratification of the maternal instinct, and thus lessening it, till by degrees it was lost altogether. It might be objected to such a theory, that if it be the correct one, every breed of domestic poultry kept in confinement for eggs alone ought to show a regular decrease in incubation; but the reply would be that very often at least this really is the case. Amongst many letters received during years of correspondence, which testify undesignedly yet directly to this fact, we may mention, as the most striking, one from a large breeder of Light Brahmas in the United States, who wrote as his decided opinion that "with a very little care the tendency to sit might be easily diminished, or even bred out of them altogether;" adding as proof the fact, that whilst the birds he started with showed the usual propensity to sit rather often, this had grown less and less, till during the season before his letter he had hardly been able to find a sitter amongst a large flock. Be this as it may, whenever a Spanish hen does steal her nest, she usually makes a good mother. Although we never knew a case ourselves, we once heard of one well authenticated, in which a hen sat and reared a brood even in strict confinement; but we believe the same hen had stolen a nest the previous year, which had probably re-awakened and developed the dormant instinct. It is by no means uncommon for Spanish hens to remain on the nest for a day or two, with an occasional cluck, and other signs of uneasiness; but even for the few days it lasts the sitting is usually unsteady, and the inclination soon passes off. The great majority never show any inclination to sit at all.

Spanish fowls are pretty good eating, but the flesh generally eats rather dry. They are not handsome on the table, the breast-bone almost always projecting sharply, so as to make the fowl appear thin, and the black legs being also an objection. This breed does not, in fact, lay on meat readily upon the breast; and for table purposes must therefore be regarded as only a good second-rate fowl, by no means equal to either the Dorking, the French breeds, or the Asiatic races. This, and certain points to be attended to in exhibition, are well stated in the following sentences, from Mr. Hewitt, with which our discussion of this variety may be concluded:—

"Well-bred Spanish fowls, when seen in high condition and plumage, are commonly regarded as being the most aristocratic in appearance of any variety of our domestic poultry; but to ensure this they must have a considerable amount of careful attention, and a suitable run. When thus circumstanced they are excellent layers. As table fowls, however, they do not hold a high rank, the flesh being not as highly flavoured as that of many other breeds. Although when full of eggs or on the point of laying, both the pullets and the hens are weighty in the hand, Spanish fowls are

not by any means favourites of the poulterer. This arises from their "stilty" build, making them appear when alive much larger than they prove to be when stripped of their feathers for sale purposes. The keel of the breast-bone stands high, and their appearance dressed is therefore objectionable from the want of plumpness. This spareness of conformation is still further proved simply by weighing them. The best Spanish cock that was exhibited for many years, and that to the eye looked a very fine one, never weighed more than six pounds; and several other of our best prize cocks, when similarly tested, proved scarcely as weighty as the one just named. It must be remembered, however, that though they weigh so badly, a fine well-grown Spanish fowl—other points equal—is always preferred in the show-pen.

"Of late years a very objectionable feature has often appeared among our Spanish fowls, viz., cocks being exhibited with tails carried in such a manner as almost to touch the head, or, as it is commonly called, 'squirrel-tailed;' this defect usually proves hereditary, and destroys the character of an otherwise perfect specimen in competition."

BLACK MINORCAS, OR RED-FACED BLACK SPANISH.—It is thought by many that this variety is probably the progenitor of the White-faced Spanish, differing as it does chiefly in the face being red, the ear-lobe being white, as in the Spanish. The constant tendency of all Spanish strains to revert to the red face, if neglected, lends much probability to this view.

Mr. H. Leworthy, of Barnstaple, who has bred most sub-varieties of the Spanish tribe for many years, gives the following notes on this breed:—

"I believe the Black Minorcas really were imported from the island of Minorca, in the Mediterranean, as a personal friend of mine, a Mr. Wills, told me he had seen them running about there generally. For the last fifty years they have been a great deal kept in the neighbourhood of Barnstaple. They are rather small in size, but very hardy, and good layers, laying nearly ten months in the year. Pullets hatched the latter part of March will generally commence laying the latter part of September, and continue during the winter and on to next moulting season; when they moult very suddenly, and sometimes suffer a great deal. At such times they require attendance and extra food.

"I never knew them sit. The eggs are white, and very large and numerous. On calculation I have found them average as high as 200 per annum; hence they will yield a large profit when eggs are one penny each, as they have been of late; for they eat but moderately, and one penny per week will keep them. Thus—

	s.	d.
200 eggs, at 1d. each	10	8
Food, 52 weeks, at 1d. per week	4	4
Balance of profit	12	4

"The comb of the cock is very large, straight, and upright, the spikes being very wide at the base and tapering to the points. The wattles are very large and pendulous; the ear-lobe long, and as purely white and soft as a Spanish; but the face is red, with a purple tinge underneath the eye, the cheeks being very thin. The eye should be a very dark colour, and the beak dark horn. The shoulders are wide, legs short, and carriage rather low. The tail is very large and flowing.

"The comb of the hen falls over one side of the face, so as almost to conceal the whole of it and even the bill; otherwise she corresponds closely with the cock, allowing for the difference of sex. The plumage both of cock and hen must resemble that of a rook, being a sooty kind of

black. The weight of the cock averages about five and a half pounds, and of hens four and a half pounds."

This breed is justly popular through the whole West of England district, including the counties of Devon, Cornwall, Gloucester, Somerset, Dorset, and Wilts. In Somerset we have seen many very fine specimens; and the city of Bristol possessed at one time several good strains. These were much finer birds both in size and appearance than those described by Mr. Leworthy; for we have seen several cocks ranging from seven to eight pounds in weight, and hens nearly six pounds; while the plumage always struck us as being if possible even more resplendent and glossy than that of the Spanish fowl. The probability is that the Barnstaple birds are a distinct strain, the description even of the carriage not being what we should apply to the birds we have been familiar with while residing at Bristol, which were of very noble and commanding appearance. They were very rarely shown, being seldom found in the hands of fanciers; but fine specimens rarely failed to secure *some* prize even in the class for "any other variety," and invariably attracted much attention. We once, indeed, heard a celebrated judge remark that a fine pen of Black Minorcas were "one of the most striking pens in the show," and the truth of the remark was evident to all observers, the noble carriage, grand size, and magnificent gloss on the plumage forming a *tout ensemble* which it was hard to surpass. Hence, we have every reason to believe that if more frequently shown they might make a place for themselves amongst the recognised show varieties.

It is, however, as useful fowls that the Black Minorcas chiefly deserve mention. They possess all the good qualities of the Spanish, with several of their own, being very hardy, larger, plumper in make, and much better even as layers. In the latter capacity they are almost universal favourites wherever known. We never knew them to equal the 200 eggs per annum spoken of by Mr. Leworthy, most of the good specimens we were acquainted with being kept in confinement; but we have known of 180 being reached; and even that is an extremely high average if the size of the egg be also taken into consideration. It is also probable that, by selecting eggs from only the best layers, in the way we have several times explained, the average might be increased considerably.

The possessors of some of the finest specimens of Black Minorcas we ever saw were poor men, who never thought of showing. It is worthy of remark that nearly all of them called their fowls "Black Spanish;" and it especially interested us to observe on several occasions, that though keeping their birds chiefly to sell eggs, and never dreaming of exhibition, they were very proud of their fowls, valued them highly, and in some cases refused as much as a guinea each for their very best birds.

In fine, we can most strongly recommend this breed as highly suitable for the production of eggs in confinement, with scarcely any risk from disease; and shall rejoice if a better knowledge of it leads to its attaining a recognised exhibition rank.

WHITE SPANISH AND MINORCAS.—There are white varieties of both the preceding breeds, probably formed in each case by breeding from the occasional "sports" to which we have already referred. The White Spanish is not by any means a nice-looking fowl, the plumage affording no contrast to the white face, but, on the contrary, giving it a sickly or ghastly cast, which is only less conspicuous when high health makes the colour of the combs and wattles as bright as possible.

White Minorcas are much handsomer birds, the red face presenting the contrast which the plumage seems to require. Mr. Leworthy writes of them that, according to his experience, they

are larger birds than the Black, taller, closer-feathered, and fuller on the breast; the cocks averaging seven and hens five and a half to six pounds. He found them more delicate than the black variety, and not such good layers, especially in the winter. The plumage should be a pure and spotless white all over, beak and legs being white also.

White Minorcas are by no means destitute of attractions; and a fine pen in the possession of a relative of our own were as hardy as could be desired, and moulted easily enough, but were not good layers. They must, however, be pronounced inferior to the newly-introduced American Leghorns, the yellow legs of the latter giving a much better contrast to the plumage, and the lively carriage also appearing to advantage, while as layers and in hardiness they are also far superior. For further particulars of this nearly-allied variety we must refer to the chapter on American breeds.

On one occasion we noticed a fine pen of White Minorcas take the first prize in the "Any Variety" class, and on several occasions second and third prizes have been awarded them in the same open competition.

ANDALUSIANS.—The variety known by this name is another which can be highly recommended for its laying qualities. Mr. Leworthy writes of these fowls as follows:—

"I have possessed birds of this variety ever since January, 1856, and I know that some at least of the first specimens were imported from the province of Andalusia, in Spain. I obtained my own first stock of the late Mr. Coles, Farham, Hants, who, I have been given to understand, purchased them from Mr. Richardson, an importer of foreign cage and other birds at Portsmouth. The latter obtained them in the first place from a Spanish trader, who landed at Portsmouth in 1851. This information I obtained by letter from Mr. Richardson himself, who afterwards sold the imported fowls to Mr. Coles. These two gentlemen crossed them with the White-faced Black Spanish, in order to improve the variety, as many of the original hens had small stand-up combs like Game hens; and I fear it will be some years yet before the effect of the cross disappears, and we get a really settled original type, many of the chickens at present coming black. Mr. Taylor, of Shepherd's Bush, also had some imported birds of this variety.

"They are excellent table fowls, the cocks weighing about seven pounds and hens five to six pounds each. They are very precocious, feathering fast and kindly, and very prolific indeed as layers. Mine average five eggs per week each, and I find the eggs larger than those of any other fowl, even Spanish not excepted. In fact, taking weight as well as number of eggs to be a criterion, I think them the most productive birds of any I know. One of my first hens commenced laying in January, 1856, and up to the end of the year she had laid 220 eggs. I may also mention that their eggs are of an exquisitely delicate flavour.

"The comb of the cock resembles that of the undubbed Game fowl, but is rather larger; the hen's comb lies over on one side of the face, as in the Spanish, though many hens even yet are bred with comb erect, as in the original birds. The wattles are in proportion to the comb. The face is red, but ear-lobes pure white, and showing up very distinctly from the face, very much as in the Minorcas. The head should be taper, with as little red skin as possible over the eye.

"The cock's neck is long, and hackle rather short; the breast full and round; tail large, and carried very high. The legs are long. The general plumage is a blueish shade or slate-colour, clear all over the ground-colour, laced round the edges with black. The hackle-feathers of the cock are a very good blue for the artificial flies used in trout-fishing. The plumage of both sexes is alike, except the hackle and upper-feathers of the cock, which are many shades darker.

"There is also a Pile Andalusian, in which the ground-colour is silver, thinly covered with light blue, which forms the pile. These are very beautiful birds, but are rarely seen."

We have had some personal experience of Andalusian fowls, a friend in whose poultry-yard we took considerable interest having kept a large stock for some years. She possessed the advantages of a good country run, and from first to last gave a most favourable account of their good qualities in every way. They were very moderate eaters, perfectly hardy, and their eggs never failed. One peculiarity, however, always struck us, and that was their extreme precocity. Mr. Leworthy has remarked upon this feature himself; but his general statement conveys little idea of the extreme "fastness" of the chickens. It was really absurd to see (as we often have seen) little beggars of no more than six or seven weeks old stand up and crow with all the impudence that could be imagined. They were also pugnacious, more so than any other of the Spanish breeds, but not enough to give much real trouble.

The lady whose stock we refer to found the hens occasionally, though rarely, desire to sit; and when they did so they made very good mothers. The same uncertainty as to colour of the chickens was found with this stock, many coming black, and with upright combs, so that much care was required to keep the yard at all true to feather; but as a safe, useful, and profitable fowl to keep, they could hardly be surpassed. We may add that we obtained from this yard a draft to stock a confined run constructed for a children's hospital, in order to supply the little inmates with the much-needed luxury of really new-laid eggs; and in these altered circumstances, also, the birds maintained their character as good and reliable layers.

Some little latitude is allowed in the colour of Andalusians for exhibition. It may vary from a pale dove-colour to a deep slaty blue, and the lacing may be black, or dark blue, or purple; or in many fine specimens can scarcely be observed at all, the blue ground being almost uniform in tint. The cock's hackle and upper plumage should, however, always be very dark in colour to look well, the rich contrast of colour being required. We have seen this portion of his plumage nearly if not quite black, which looks handsome; but the best colour for beauty, and certainly that which harmonises best with the general type of plumage altogether, is a very deep and lustrous purple. A fine bird thus coloured always graces a pen, and if worthily mated, rarely fails to obtain honourable notice.

With respect to the origin of Andalusians, we confess to being puzzled. There can be no doubt that the original birds of this colour were imported from Spain, but the exceeding difficulty, after more than twenty years' breeding, of even now obtaining a stock true to points, makes it very doubtful if these birds had any claim to the title of a distinct variety, but were not rather the produce of some recent cross. It has come within our knowledge that in several instances the crossing of white and black fowls, and even of black with black of different races, or white with white, has produced stray birds very similar in colour to the slaty blue of the Andalusian; and hence it has struck us as a possible thing that the latter may have originated by a cross between Black and White Spanish, or rather Minorca, since nearly all the birds found in Spain have red faces with white ears. The hardiness, the quick feathering, and the prolificacy, would all be in favour of such a view; and we may add that we have seen many chickens produced which were of such a very pale dove-colour as to appear more a dirty white than anything else.

However this may be, there is no doubt that a wider cultivation, with care, might speedily overcome the eccentricities which at present trouble every Andalusian breeder. As a useful fowl this variety is well worthy of attention; but the yard will always need care to avoid passing into a mongrel appearance as regards colour, which is offensive to many eyes beside those of "fanciers" properly so called.

ANCONAS.—This variety resembles the preceding in the general shape which marks all the Spanish tribes, the large comb, upright in the cock and falling over in the hen, and the large wattles and ear-lobes. The face is red, approximating it to the Minorca rather than the Spanish type; but the plumage is "Cuckoo" or Dominique in colour, the general effect of which, and the marking of individual feathers, are accurately represented in the chapter on American breeds.

We entertain scarcely any doubt that the origin of Anconas is to be found in accidental "sports" of this colour from crossing Black and White Minorcas. Black and white being readily interchanged, and White Minorcas being rather scarce, the latter have to our knowledge been often crossed with Black, most of the produce being Black or White. The result of crossing any very dark fowl with White is, however, often productive of a certain number of this "Cuckoo" marking, (we have seen this already in crossing the Dark-grey with White Dorkings), and the "prepotency," as Mr. Darwin calls it, of this colour, when once produced, makes its transmission even from a recent cross comparatively easy.

Anconas are always scarce; but we generally see a pen every two or three years, and they could be easily perpetuated if desired. They are generally "good for a prize" in the "Any Variety" class, and look decidedly attractive in a pen if of at all good points and quality. In the only case where we were able to make personal inquiry, the owner—an innkeeper, whose hostelry rejoiced in a name which must surely have conveyed the idea of Paradise to these lucky birds, being no other than "*The Wheatsheaf*"—informed us they were hardy, and "no end at laying." Of course! how could they help it in such happy circumstances? These qualities, taken in conjunction with their scarcity, would be almost conclusive in favour of their origin in some cross; and a further corroborative argument may be found in the fact that all the specimens we can remember to have seen have had shorter legs than any other variety or sub-variety of Spanish.

Birds have been exhibited under the name of Anconas of other colours than that described, We have known birds splashed black and white called by that name, and even brown and red birds. almost the colour of Black-red Game. Such have, however, in every case, presented the general characteristics of mongrels, and have no claim whatever to the title of a distinct breed, though the latter colour named suggests some inquiry as to the origin of Brown Leghorns.

LEGHORNS. — We have already remarked that these birds present nearly all the characteristics of the Spanish race; but as they differ in some important respects, shall defer the consideration of them to our special chapter upon American breeds.

It will have been seen that all the Spanish varieties agree in the principal characteristics of general shape, large combs, absence of the incubating instinct, and the abundant laying of large white eggs. These point conclusively to a common origin, while the various differences are obviously owing to the art of man, as in other varieties of fowls. It is to be regretted that some of the best varieties are not more generally known and better encouraged at poultry-shows, the Black Minorca especially being worthy of recognition, both as regards useful qualities, and for its exceeding beauty when well-bred. As a table fowl, the Andalusian and Ancona varieties are decidedly the best, being more juicy than the others; but their laying qualities alone will entitle the Spanish to be regarded as not only exhibition varieties, but most useful races of fowls.

Most of the crosses make capital layers, the best in our opinion being that between the Spanish cock and Brahma hen, to which we have already alluded. Both this cross and that with the Cochin make capital sitters. The cross with the Houdan produces a nondescript bird which often lays enormously, but usually sits at least once a year. In fact, as already remarked, good

laying qualities distinguish nearly all the cross breeds. The Columbian fowl, to which we have referred on a previous occasion, is the most promising of all the Spanish crosses, and might be made into a new and attractive variety with comparatively little trouble, this cross appearing to "hit" well.

JUDGING SPANISH.—Though certainly the chief, the face is not the only point which requires to be taken into consideration in judging Spanish. Handsome proportion and carriage are of great moment, and so is a good condition of the plumage. A bird well shown as regards these, and with a moderately good face, should decidedly have the preference over any bird in which an extraordinary face is the only point of excellence. The squirrel-tail alluded to by Mr. Hewitt is always to be considered a grave fault, and treated accordingly.

The face, however, as the principal point, demands the most careful consideration, and various points about it have to be considered, viz., its size or area, its shape, and its quality. Some faces are very long, but narrow; others are wide, but short; and a symmetrically proportioned, though rather small face, on a bird nicely got up, will often tell better and win, in preference to more surface less elegantly shaped. Folds in the ear-lobes, as we have already remarked, are a serious fault, more prevalent now than formerly. The comb of the cock, if the judge values his reputation, should have his special attention, with a view to see if it is likely to "fall over" after judging—a fact which can in many cases be detected by handling—and the small holes Mr. Teebay has mentioned, or marks of other "treatment," should always be looked upon with more or less suspicion of such a result. For the rest we must refer to our schedules.

SCHEDULE FOR JUDGING SPANISH.

GENERAL CHARACTERISTICS OF COCK.—*Head and Neck*—General appearance of head very large and deep, though aristocratic. Skull large every way, but especially deep in the cheeks; beak rather long, but not thin; comb very large, single, perfectly straight and upright, of a handsome outside arch or curve, and with the serrations symmetrically formed and disposed; wattles very long, fine, and thin in texture; face large, bare of feathers, and fine in quality; deaf-ears very long and pendulous, but free from folds, duplicature, or wrinkles, broad and rounded on lower edge; neck long, carried high or well back, and with flowing hackle. *Body*—General appearance light and active, large at shoulders, and tapering to tail somewhat like the Game fowl; back rather round and slanting to the tail; wings long and well-developed, but carried tightly to the body; breast rounded and carried very forward. *Legs and Feet*—Both legs and thighs long and slender, the hocks perfectly clear; toes long and thin. *Tail*—Large, the sickles very arched and carried high, but not so high as to be squirrel-fashion. *Size*—Medium, averaging about six pounds to occasionally seven pounds. *General Shape*—Rather slender-looking, as if thin. *Carriage*—Very upright and strutting, with much movement of the head and neck.

GENERAL CHARACTERISTICS OF HEN.—In all respects resembling those of the cock, except that her comb falls over to the side, almost or quite hiding one side of the face.

COLOUR OF WHITE-FACED BLACK SPANISH.—*In both Sexes*—Beak dark horn-colour; comb and wattles brilliant red, except the inside of upper part of the wattles and across the throat, which are white. Face or cheeks pure white, resembling the finest dressing and quality of white kid, the white to extend high over the eye in an arched form, reaching far back, clearly behind (or so as to encircle) the true ear, which appears as a black spot on it, and thence turning down, merges into the ear-lobe, which is of the same pure and brilliant white. The face should be as free from folds or projections as possible, and leave the sight perfectly free. Legs and feet a dark leaden blue or almost black. Plumage all over pure deep black, with as much green gloss as possible, especially in the cock (when the gloss is very high it often assumes a purple tinge, especially in the cock's hackles).

COLOUR OF BLACK MINORCAS.—The same in all points as the above, except that the face or cheeks are a deep crimson red instead of white; the ear-lobes, however, being white as before.

COLOUR OF WHITE SPANISH.—The same as for the White-faced Black Spanish, except that the plumage is a pure spotless white, instead of glossy black; the beak and legs generally remaining dark in this variety.

COLOUR OF WHITE MINORCAS.—*In both Sexes*—Beak white; comb, face, and wattles a brilliant red (the face in this variety

being a bright scarlet red, instead of the deep crimson of the Black breed). Ear-lobes a pure and spotless white. Legs and feet white. Plumage all over a pure and spotless white, free from yellow or reddish tinge.

COLOUR OF ANDALUSIANS.—Resembling in all points that of Black Minorcas, except that the plumage, instead of black, is of a blueish grey, ranging from a pale dove-colour to deep slaty blue. A lacing of darker colour or even black on each feather is preferable; and the backle and saddle of cock should be black or dark purple, with a rich gloss.

COLOUR OF ANCONAS.—Resembling in all but plumage Black Minorcas. Plumage Cuckoo or Dominique, each feather in both sexes being a grey or blueish-grey ground, barred or pencilled across with darker blue-grey. Plumage to be free from yellow, red, or white.

VALUE OF DEFECTS IN JUDGING.

1. WHITE-FACED SPANISH.

Points of Merit.	
A bird perfect in shape, style, colour, face, and condition, to count in points	100

Defects to be Deducted.	
Bad shaped comb	10
Deficiency in size of face	10
Roughness or want of quality in face	12
Sight obstructed	11
Ear-lobe folded, wrinkled, or duplicated	10
Scabs or blemishes in the white	8
Too scanty hackle	6
Squirrel-tail	9
Want of size	8
,, ,, general symmetry	18
,, ,, condition	15

DISQUALIFICATIONS.—Cock's comb falling over, or twisted in front; or hen's erect. Any decided red on the face. Plumage of any other colour than pure black in the Black breed, or pure white in the White. Legs of any colour but dark lead-colour, blue, or black. Crooked backs, or any bodily deformity. Combs in any way trimmed or pierced. Trimming away of the feathers between top of the face and base of the comb.

2. MINORCAS, ANDALUSIANS, AND ANCONAS.

Points of Merit.	
A bird perfect in shape, style, colour, and condition to count in points	100

Defects to be Deducted.	
Bad shaped comb	10
Ear-lobe folded, wrinkled, or duplicated	8
Stain of red on ear-lobe	12
Scabs or blemishes on ditto	8
Want of hackle	6
Squirrel-tail	12
Want of size	15
,, ,, symmetry	20
,, ,, condition	15

DISQUALIFICATIONS.—*In all Varieties*—Cock's comb falling over to one side, or hen's not doing so. Combs trimmed, cut, or pierced. Crooked backs or tails, or any other deformity. Any fraudulent trimming, dyeing, or dressing whatever. *In Black and White Minorcas*—Legs of any colour but dark-leaden or black, or white, respectively, or the occurrence of any coloured feathers in the plumage. Any sign of white face. *In Andalusians*—Birds not matching in the pen. White feathers in the plumage, or black, except as a lacing or on cock's hackles. White legs. *In Anconas*—Birds not matching in the pen; occurrence of white, red, yellow, or black in the plumage.

CHAPTER XXIV.

HAMBURGHS.

THE fowls known at the present day under the general name of Hamburghs, and which present the common characteristics of rather small size, slender clean legs, neat rose combs, moderate-sized white ear-lobes, light but sweeping and graceful outlines, and the absence of the incubating instinct, had certainly two distinct origins. There is very little doubt that the two varieties known as Pencilled Hamburghs were really imported from Holland, having been, for years previously to the present name, well known under the title of Dutch Everyday Layers or Everlasting Layers, and having been largely imported both at a comparatively recent date, and on many former occasions of which there is historical evidence. The Spangled and Black varieties, on the contrary, are as evidently a native English breed of considerable antiquity, having been kept and shown at village exhibitions beyond the memory of man; and the Spangled breeds, besides the difference in marking, presenting differences of shape, being larger, plumper, and somewhat coarser in make, besides a greater width across the skull. These latter varieties were always known under the name of the Lancashire Mooneys and Yorkshire Pheasant fowls, while the Blacks were called Black Pheasant fowls; until almost immediately after the establishment of the Great Birmingham Show the authorities there—chiefly, we believe, owing to the influence of the Rev. E. S. Dixon—grouped all under the general name of Hamburghs, and the paramount authority of that great gathering was sufficient to make the new nomenclature general. We confess we cannot see the evils some have pedantically professed to find in this; the new name is not, so far as we have found, at all misunderstood in a geographical sense, and it answers at least the useful purpose of forming into one compact group fowls which in their main characteristics are very similar.

We are not sure but that the argument may be carried further, and that the old Birmingham authorities whose work has been so much villified in some quarters may not have been guided by a sounder instinct than at first sight appears. Fully admitting that for a long period the Spangled and Pencilled races have been thoroughly distinct, and can be traced back only to distinct origins, it is still impossible to stand before the pens at a good show and compare the Gold-pencilled with the Gold-spangled, and similarly the two Silver classes, noting thus practically the striking analogy not only in heads, deaf-ears, size, and shape, but in the common property of a distinct lustrous black marking on one or the other ground-colour, and remembering also the equal similarity as regards absence of any incubating instinct, without the question almost irresistibly arising of whether there was not some still more ancient common progenitor of both; and this question is by no means dismissed by the difference in the shape and character of the present markings. Once started, the arguments in favour of such a hypothesis will be found very strong indeed; for not only, as we shall see further on, are Spangled chickens frequently *pencilled* in their first feathers, but later in life the black spangles or moons are frequently surmounted by a light tip beyond them, thus again approaching to the pencilled character; while conversely it will be seen that if Pencilled birds be bred too dark, the last bar has a strong tendency to become much too wide, thus

approaching a *spangled* character. Perhaps, indeed, the evidence of these facts is about as strong as could be possibly anticipated at such a late date in favour of this view, if we consider the utter want of interest in poultry, and consequent absence of observations at any distance back; and the same reasons make it exceedingly difficult even to conjecture what the common progenitor—if there was one—may have been. Bearing in mind, however, that old Aldrovandus calls a fowl which bears a very plain general resemblance to the Silver-Pencilled breed *Gallina Turcica*, or the Turkish Fowl, it is rather interesting to notice how this very name alone suggests an Eastern and therefore probably more ancient origin than either the Dutch or English we have been considering; and it may be that here we have either the parent or a near descendant from the parent stock of each. These are, however, mere speculations; they may be legitimate, or they may not, and we mention them chiefly as another instance of the fascinating problems that constantly present themselves for solution to the poultry-fancier of a philosophic or inquiring turn of mind.

In proceeding to the consideration of the different varieties of Hamburghs, we have the greatest pleasure in being able to give the views and experience of Mr. Henry Beldon, of Goitstock, Bingley, Yorkshire, who has never been approached in his general and continuous success as an exhibitor of the Hamburgh varieties. It has long been known that the rules of breeding followed by him and others at the present day differed considerably from those formerly pursued and recommended by fanciers of good standing; but no account of the present methods has yet been published. All breeders will therefore feel indebted to him for the notes he has furnished; while naturalists will feel interested in the light thrown upon various questions by the amalgamation into one strain of races which only a very few years back were pronounced by high authorities incapable of any such real union, though crossed *as* separate varieties for the production of show birds.

"Hamburghs," says Mr. Beldon, "are without doubt the most beautiful breed of poultry we possess, as well as one of the most useful. In their different varieties they give plenty of scope to the fancier to indulge his tastes; but whether he choose Pencilled or Spangled, Gold, Silver, or Black, all are without doubt elegant and beautiful. The dweller in the country will generally prefer the Silver, while the citizen will take the Golden or the Black; but all of them, in their matchless variety of marking and colour, will delight the eye with the utmost degree which is perhaps possible of beauty in fowls.

"Hamburghs, however, require free range. They are of little or no use penned up, in which state they pine and mope for liberty, that bright cheerfulness which is common to them disappears, and from being the happiest they become the most wretched of birds. If your convenience will not allow you to give them a grass-run of moderate size, my advice is to keep some other kind; but if you have a good run no class of poultry will pay so well. They are small eaters and wonderful egg-producers, a single hen laying in a twelvemonth, under favourable circumstances, from 200 to 220 eggs. They are also capital foragers, and when in health will always be seen at work, especially in the early morning, rummaging the pastures. Their quick eye at once espies their prey, and woe to the poor worm that happens on that particular morning to have got up a little too early; its early hours are suddenly put a stop to, and in this case the early riser finds it is not always well to be up *too* soon. Another good quality is that they are generally non-sitters, and there is not so much trouble with them as with the sitting varieties, though there are exceptions to the rule. I know that some people look upon any Hamburgh sitting as an evidence of taint in the blood, but I am quite sure this is an erroneous notion; for the best Silver-spangled hen I ever possessed (in fact, the very same bird Mr. Teebay mentions in another work as one of the best he ever saw, and as moulting without change up to seven years old), without doubt the most successful winner of cups and prizes during the present generation, wished to sit. In this case, however, the fit only came upon her in old age,

being no less than eight years old. She clucked and sat steadily upon any eggs she could get at, but I thought she was too old to take the charge of a family with all its cares and troubles, and therefore checked her, though with considerable difficulty. The poor old lady died in the winter of the same year (1870), and I only mention her as showing that the very best birds will sit occasionally.

"As a rule Hamburghs are a healthy breed, and for the farmer I think they are the fowl of fowls. On a good homestead they will almost keep themselves, and if well attended to will pay as well as any other part of his stock. The chickens, too, are easy to rear. Of course, they will not rear themselves, but with moderate care no difficulty will be found in getting them to maturity. They need good coops, which should be placed on a nice grass-run, as far as convenient from the old birds, as I always find chickens do much better *quite away from adults;* otherwise the old fowls pick up the food the chickens should have, not only robbing them, but getting far too much for their own welfare. They should be fed often, giving only a little at a time, just what they will eat. In the first five or six weeks, I should advise feeding every two or three hours, after that less often will do; but the better the chicks are looked after the finer they will be, and there is nothing lost by a little extra care. The best staple food I have found to be oatmeal and thirds mixed, and made up into a stiff crumbly mass. As they get older I mix more of the thirds and put less oatmeal, and by degrees give a little wheat, but soft food should be the chief of the diet. The great thing is to feed often, beginning early and leaving off late. The coops I prefer are simply made of wood, about two feet square, with sloping roof and sliding front, to admit of letting out the chickens without the hen if you think proper, but with a movable bar to let out the hen also. The coop should be without bottom, so that you can change on to fresh ground as the other gets tainted, and if possible I change on to fresh ground daily. The chickens reach maturity early if well cared for and not stopped in their growth. I have often had pullets laying at five months old, especially of the Pencilled varieties; the Spangled do not generally lay quite so early.

SILVER-SPANGLED HAMBURGHS.—"The Silver-spangled Hamburgh, or Silver Pheasant as it is commonly called in Yorkshire, is a breed that has for generations been known in this country, and for its cultivation to the present state of perfection owes everything to the counties of Lancashire and Yorkshire. In Lancashire this variety had been brought to a very high standard of excellence years before ever poultry-shows were thought of, and as regards feather, all our modern skill and careful breeding has been unable to improve upon the old breed; indeed, I don't think it would be possible to improve it, for some of the old Mooneys, as they were called, were absolute perfection in this point of feather; the spangling, so large, round, and rich in colour, was really something to be wondered at, and shows a skill and enthusiasm in breeding which, in the absence of public shows in those days, has about it something of the marvellous.

"This careful and extreme breeding for feather in the old Lancashire Mooney fowls it was, in my opinion, which resulted in producing hen-feathered cocks—that is, cocks feathered similarly to the hens, with spangling on back, sides, neck, &c., and with a square or hen-tail (Fig. 82). Be this as it may, it was to this variety at the beginning of the poultry-showing era, some score of years since, that all the prizes were given; but after they had enjoyed a year or two's popularity, the judges at Birmingham all at once announced that this hen-feathering of the cocks was not the 'correct thing,' and also stated that such birds were unprolific. In this latter charge there was some truth, as many of these cocks will not breed, though some others are prolific enough; but as a result the hen-tailed cocks were thrown out, and their reign as show birds was over, though they are still kept by a few ardent fanciers for breeding purposes solely.

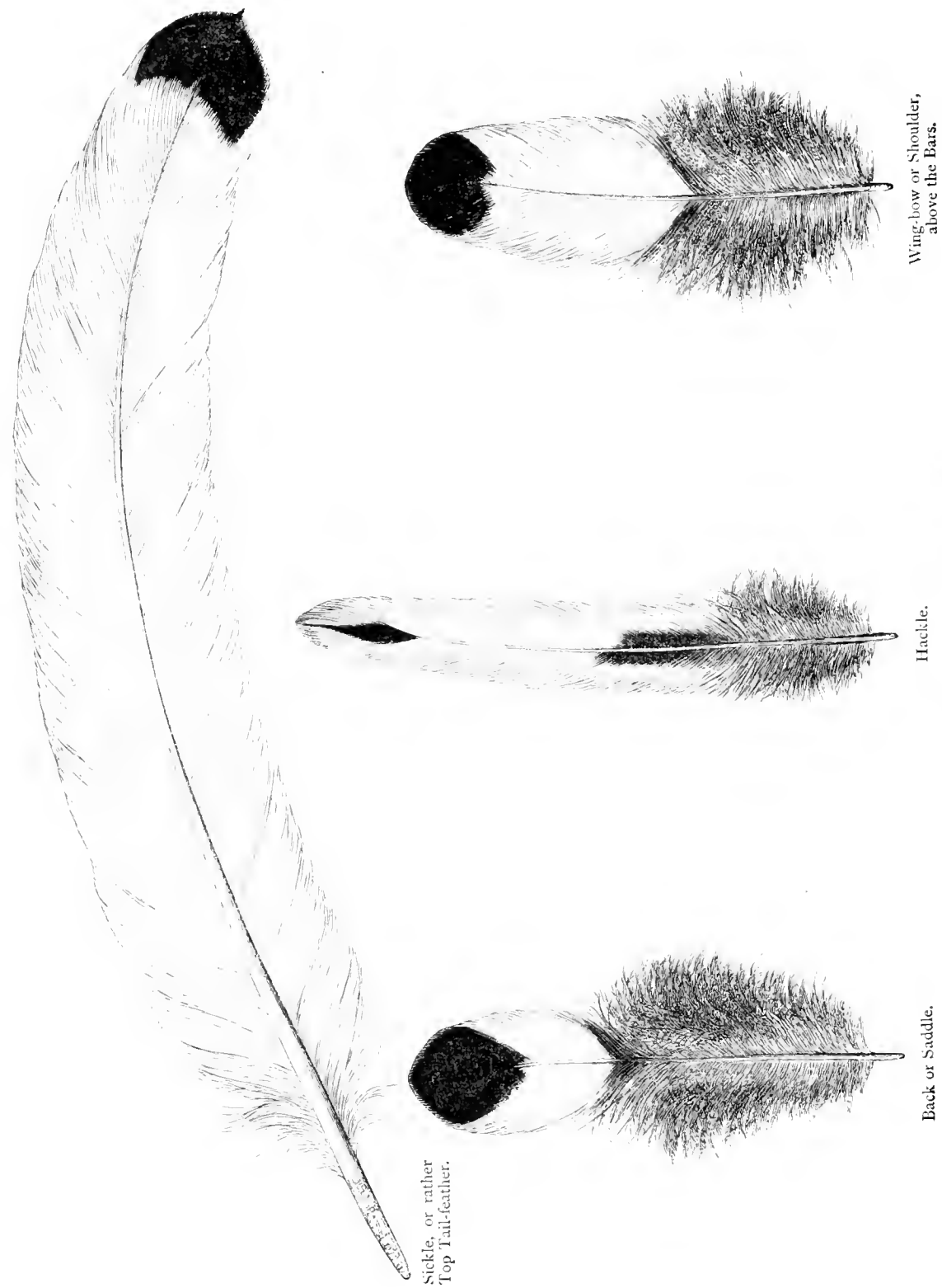


Fig. 82.—FEATHERS OF HEN-TAILED SILVER MOONEY COCK.

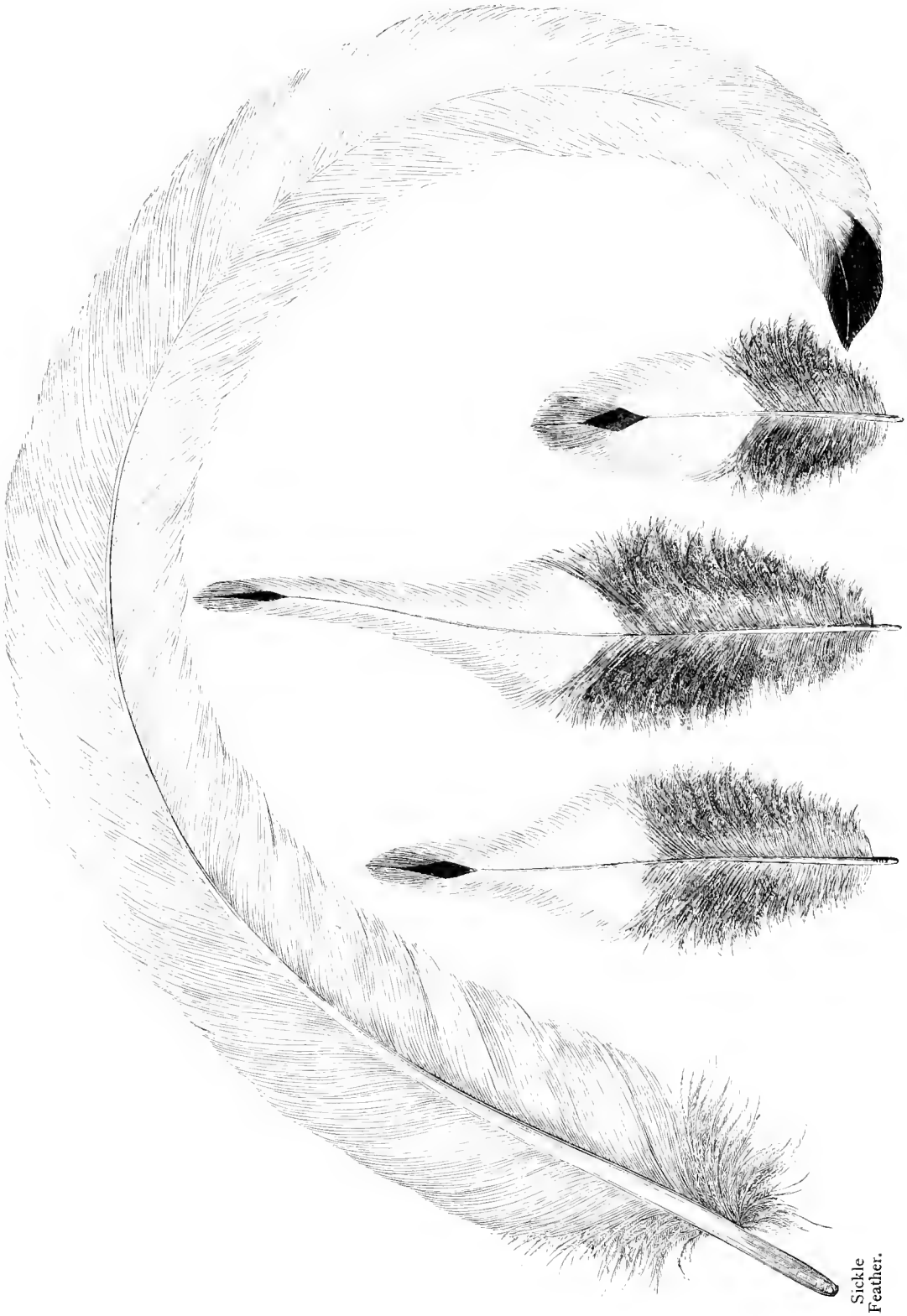


Fig. 83.—Feathers of Full-plumaged Silver-spangled Cock.

"In Yorkshire, on the other hand, we possessed another Silver-spangled breed which had the desired cock-feathering, the cock being indeed a fine full-plumaged bird; but the colour and size of the spangling was much inferior to the Lancashire variety. I feel morally certain myself that this was the breed the Lancashire people had to commence with, and which was bred up to such perfection by them as stated above, losing in ear-lobe and developing the hen-tail through continued breeding for feather only. This cock-feathered, or Yorkshire Pheasant breed as it was called, lacked not only the size, but the roundness and glossy greenness in the spangles of the Lancashire variety, but were decidedly smarter in appearance, and possessed whiter ear-lobes. The hen-feathered Lancashire Mooney breed has reddish ear-lobes, and even the Yorkshire Pheasants had not much to boast of in this respect; still they were whitish, and a few years' careful breeding soon brought this point to perfection. The Yorkshire cocks had, moreover, nice clear tails, while the hen-feathered cocks often had smutty tails; but, on the other hand, they much lacked colour on the back and wings.

"At first these Yorkshire cocks were shown alongside the Lancashire Mooney hens, and of course to breed prize-winners the two varieties had to be kept and bred separately. Each variety, however, possessed great defects: in the hen-feathered Mooney the combs were coarse and the ear-lobes red; while in the Yorkshire cocks the back, saddle-hackles, and shoulders were white. The two were therefore bred together, at first chiefly for the production of better cockerels; but by degrees an amalgamation of the two breeds was brought about, and by careful and judicious crossing a bird was at last produced that contained all the required characteristics. Some noted fanciers yet breed from two sets for cockerels and pullets, taking for pullets the old hen-feathered breed; but when this is done great care must be taken that the strain is pure hen-feathered on both sides. The disadvantage of this plan is, that the surplus cocks from this strain are worth absolutely nothing for exhibition, and very frequently will not breed [*i.e.*, are unprolific], so of course such surplus birds have to be killed off, or sold for breeding purposes only. For cock-breeding, of course, such fanciers choose birds likely to produce the required points; seldom now using the pure Yorkshire, but selecting a bird with fine smart comb, good ear-lobes, good bars, well spangled breast, and as clear a tail as possible, with of course good back and saddle spangling (never found in the Yorkshire pure), and putting him with hens well spangled throughout, and having good combs and ear-lobes. It will, no doubt, be thought by many to be but a clumsy way of breeding, to have to breed from what are really two sorts; and in fact it is now not really necessary to do so, as the cocks now suited for the most successful competition are also such as breed the best pullets; the chief requirements necessary to success in the pen being now that the bird possess as much marking as possible without being hen-feathered, which is also what we want for pullet-breeding. This has taken much time and patience to effect, but it is unquestionably a very great gain.

"I therefore, taking the Silver-spangled breed as it has been formed by the skill of fanciers, and now actually exists, advise the beginner to proceed as follows. Let him get from some well-known breeder such a bird as I have just described—that is, possessing good comb and ear-lobes, with as much spangling on back and saddle as possible, good bars, and clear tail, but not hen-feathered; in fact, a good deep-coloured show cock; and simply put him to the very best hens he can get, avoiding carefully any great faults on either side, such as a coarse comb or smudgy markings, and then try what he can do. If he thus produces a fair proportion of good chickens, let him stick to this set as long as they will breed, for it is not every lot that hits well. If the produce is not to his mind let him change the cock, getting one from some other strain, and so on till he gets what he desires; for the different strains and the two breeds I have described are now

so mingled that it is difficult to proceed in any other way. In all varieties of fowls there are found some strains which produce better cockerels than pullets, and *vice versa*. Of course, it is so in Hamburghs also; and if the fancier has sufficient room no doubt he will find it to his advantage to breed from two sets. For instance, if he finds a pen breed capital cocks but only middling pullets, it will be better to keep this set of birds as they are, it being far better, and perhaps harder, to breed really good birds of even one sex, than middling birds of both. It is therefore well worth a little patience, and when you have once got a set of birds together that produces first-class chickens, then stick to that set. All experience will confirm this; and with all my own, taking Hamburghs as they are at the present day, I do not know that I can give any other rule, which is that by which I breed my own fowls. We never now breed from the Yorkshire Pheasant if we can possibly help it.

"I will now state what is my idea of a perfect Silver-spangled cock, beginning with colour, as that is of the most importance. The ground-colour must be a clear silvery white, perfectly free from yellow tinge. I speak, of course, concerning birds in full and perfect plumage; as very many birds at the end of the season, if they have been exposed to the weather and sun, will become yellow. The spangles should be a rich satiny green-black, and their form (on all those parts of the body of the cock which show the full size, as, for instance, the breast and tail) as round as possible. The disposition of the markings is as follows: breast well and boldly spangled from the throat down to the thighs and fluff, black fluff being an especial abomination. The larger the spangles are the better, provided only that a sufficiency of white is shown, that is, if, looking at the breast, both black and white appear distinctly. In some the spangles are so large that they overlap, and give the breast the appearance of being black; this, of course, is a fault; the spots should be as large and round as possible, but so as to show the white between. The neck-hackle is white, but if spotted at the bottom all the better. Back and saddle-hackles should be well spotted with black. The bars on the wing, formed by the large spangles on the end of the primary and secondary wing-coverts, are two in number, and should be bold and regular; these bars are one of the most cardinal points. Above the bars, or the wing-bow as it is called, should also be well spotted; it can scarcely be called spangling, as the feathers in this part of the cock are different to the hen's, being long and narrow. This remark also applies to the back and saddle; I therefore use the word spot to express the marking, instead of spangle (see Fig. 83). The 'stepping' on the wing secondaries should also be well defined—that is, each feather should have a very bold crescentic spangle at the end, which gives an appearance of black steps. The tail to be clear white, with a large bold spangle at the tips of the feathers; though a little colour in the hanging or side-feathers is not objectionable, provided the sickles and secondaries are clear. The comb should be even, firmly set on the head, long, and moderately broad, full of 'work' or points, free from hollow in the centre, and ending in a long pike slightly pointing upwards. The beak should be horn-colour, ear-lobes a clear white, smooth, and as nearly round as possible; face red, quite free from white; and eyes, in this variety, a dark hazel. The legs are slaty blue. As regards shape and carriage, the neck should be nicely arched, with very full hackle falling well on to the shoulders; the breast full, broad, and prominent; back a moderate length, broad and level across, not round or up at one side; tail full, the sickles long, broad, and well arched, and the side or furnishing feathers nicely arched also, the whole to be gracefully carried, not squirrel-fashion, but very slightly drooping behind the perpendicular line, and to be evenly set on, not carried on either side. The whole carriage to be graceful, jaunty, and cheerful. Size, say about five pounds, but this is not of great moment, provided he is not very small.

"The hen should be boldly and evenly spangled throughout, the spangles being round and

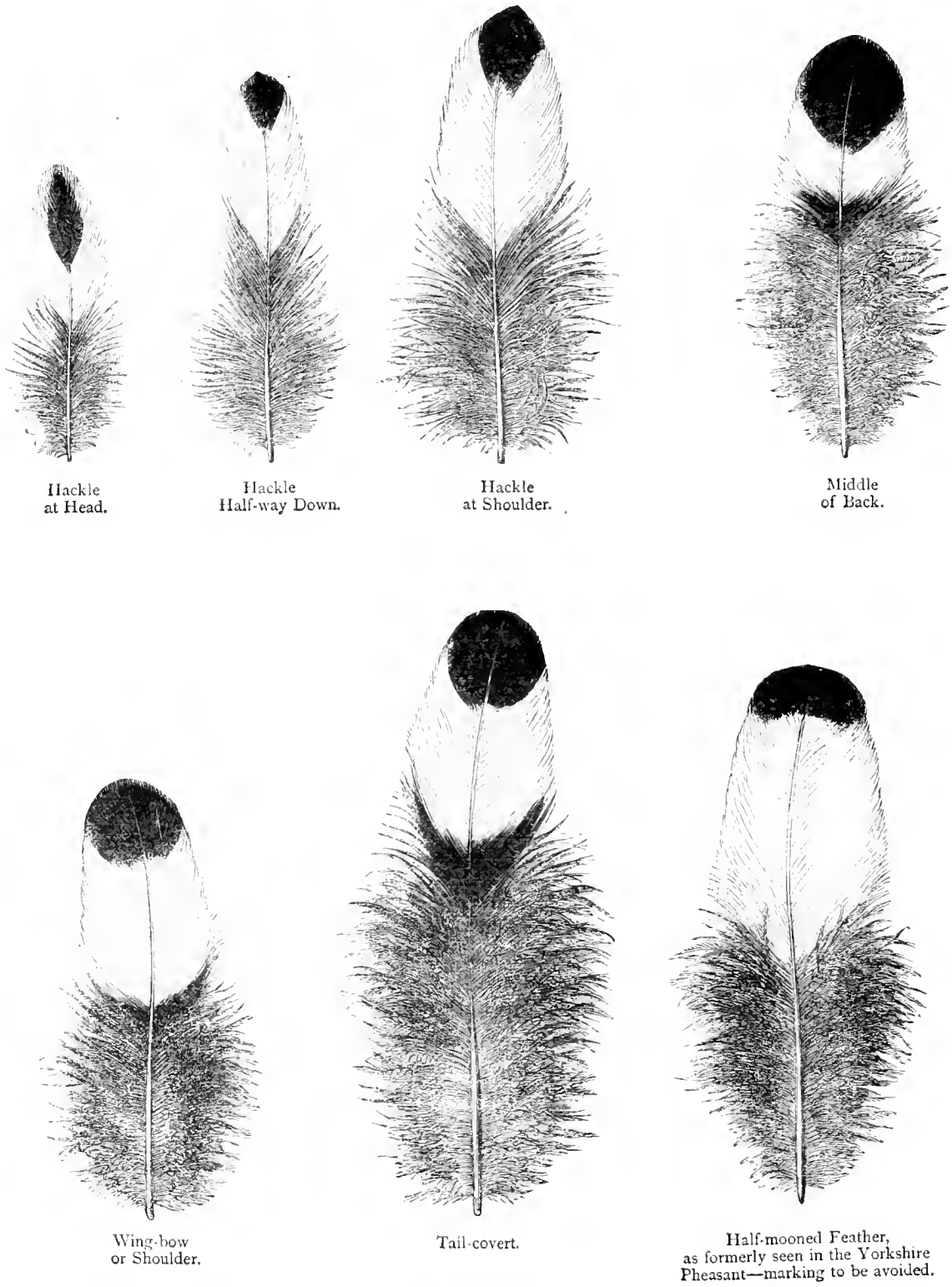

Hackle at Head.
Hackle Half-way Down.
Hackle at Shoulder.
Middle of Back.
Wing-bow or Shoulder.
Tail-covert.
Half-mooned Feather, as formerly seen in the Yorkshire Pheasant—marking to be avoided.

Fig. 84.—FEATHERS OF SILVER-SPANGLED HEN.

large, but not of such a size as to overlap each other and give the bird a patchy appearance; on the contrary, the white should show between each feather, though a bird *perfect* in this respect is scarcely ever seen. The colour of the black spangles is a very great point; it must be a very rich satiny green-black, the spangles having almost a raised appearance; in fact, I have taken hold of some hens on which I have almost fancied that I could actually *feel* the spangles. The ground-colour is a perfectly clear silvery white, and the marking as follows: The neck to be well spotted from the head downwards; back well and evenly spangled (I like a hen with a broad back, as there is then more room for the spangling, which appears to better advantage); wings well spangled with bold spangles above the bars, which bars are double as in the cock, and must be bold and well defined; breast spangled from throat down to fluff; tail clear white—no pepperiness in it—and with a good bold spangle at end of each feather. The comb should be smart, full of 'work' or points, with a long spike behind, evenly and firmly set on the head; the ear-lobes white, beak horn-colour, legs slaty blue, and eyes hazel as in the cock. For size say about four pounds, though this is not of importance if they look a pretty fair average.

"For use I consider this variety of fowls to stand in the very first rank. No breed *can* excel them in laying properties, and many birds lay eggs of a pretty fair average size, while the food they consume bears favourable comparison with that required by other breeds. They need a good grass-range to fully bring out their best qualities, though I have known this variety do pretty well in a confined yard; still it seems really a pity to pen them up, and I do not advise any one to keep them who has not a wide run. For beauty no fowl can excel them, in my opinion. They are very prolific, the eggs hardly ever failing to hatch, and the chickens are very lively from the first, and easy to rear. They reach maturity pretty early, and if well housed will lay at from five to six months old."

When the Yorkshire Pheasant and Lancashire Mooney were bred together to produce exhibition cocks, the practice was to mate Mooney cocks with Pheasant hens, and some breeders still pursue this plan, breeding the Mooneys pure for their pullets. We may, however, remark that though old fanciers can distinguish pure Mooneys from crossed birds, it is almost impossible for a beginner to do so, and the pure breeds are now very difficult to obtain, except by the inhabitants of their native counties, who know where to lay their hands upon them.* Should any of our readers, however, be able to obtain a pure Mooney strain, and be desirous of breeding from it for the sake of the pullets, while yet wishful to breed cockerels also for exhibition, and only having one run, they must proceed upon the following plan, which has been followed under Mr. Beldon's advice with success. Get a pure Mooney cock (if whitish in the ear-lobes all the better), and of course pure Mooney hens also for the pullets. Then add a couple of hens for cock-breeding, with very smart combs and good ear-lobes, and very clearly marked, especially about the tail, but somewhat lighter in the spangling. From such hens and the Mooney cock it is

* In a note received just as these pages go to press, Mr. Beldon writes, "Nearly all the so-called pure Mooneys now have white ear-lobes, showing they have been modified by breeding. Hen-feathering is no sign of absolutely pure blood, being very easily produced. In Yorkshire also, though I live there, I should have some difficulty now in finding a pure-bred Pheasant, our Mooney hens having a dash of the Pheasant, and our so-called Pheasants a *lot* of the Mooney. At the last Birmingham Show (1872) there was not one *absolutely* pure Mooney hen, though there were some splendid birds. Some ten or twelve years ago I came into possession of a lot of Silver Mooney hens, the really pure old stamp, picked up from all parts of Lancashire by old Jack Andrews [referred to on next page]. These hens were much larger than those we have at present, and were certainly coarse; but for spangling—it was perfection! Still, I think among the amalgamated strains we have as good, and that moult as true. I inquired of old Jack, a very short time ago, if he thought any of this 'old sort' could be found still; he said he had looked the whole county through, but could find none."

very likely good show cockerels may be produced; but the mode of breeding recommended by Mr. Beldon is preferable in many ways, and will very speedily be the only method practicable.

From feathers kindly supplied by the same authority we add representations which will make clear the difference in the strains, and especially in the marking of the hen-feathered Mooney cocks. None of these feathers, or any others in this work, are in the least idealised, but faithfully drawn just as they appear upon the birds.* The clear spots on the hackles of the hen-feathered cocks will be noticed, and also the substitution of round black spangles on the shoulders and back, instead of the pointed character of the plumage in the full-feathered cocks. We also include amongst the hen-feathers a figure of the old pheasant marking, which, on account of its crescentic character, is now carefully avoided by all good breeders.

GOLDEN-SPANGLED HAMBURGHS.—"In the early part of the poultry-showing era," continues Mr. Beldon, "say some eighteen or twenty years ago, there were two varieties also of the Golden-Spangled Hamburgh, the one most common at the poultry-shows being however in this case the Yorkshire breed, known as the Golden Pheasant. These were fine large birds, and the cocks as a rule hen-feathered; in fact, at this time the hen-feathered birds were all the fashion, so that, although there did not lack full-plumaged birds of the same variety, only the hen-feathered were retained. This Yorkshire Pheasant breed generally produced capital layers. The spangling was bold and of a glossy green black, but the ground-colour was of a light dull bay, and generally there was a good deal of what I may call pepperiness in the ground-colour, so that the spangling was often not clear and sharp-looking, especially in the tail-coverts. As a rule this variety had whitish ear-lobes—not of course so white as we have since bred them by judicious crossing, but still whitish, and besides being, as already stated, a good layer, was a pretty hardy breed.

"In Lancashire there was another variety, cultivated chiefly by the weavers and colliers. This was called the Golden Mooney; it was a much smaller bird, but for colour and marking threw the Yorkshire Pheasant entirely into the shade. I shall never forget my feeling of pleasure on first seeing the Golden Mooney hen: she struck me as something wonderful. The ground-colour of the plumage in these fowls is of the very richest bay, the spangling very bold and clear, and of a green satin-looking black; in fact, the plumage was so rich and glossy that the full beauty of it could not be seen except in the sunshine, but when it *was* seen formed a picture never to be forgotten. I am here speaking of the hen. The cocks' plumage was also of the very richest description; but their great drawback was their red ear-lobes and black breasts—in fact, they had no ear-lobes at all to speak of, but merely a bit of red skin like a Game cock. These cocks were never shown, but merely kept for breeding purposes. Shows were held in many of the village public-houses in Lancashire, the competitors being mostly colliers and weavers of the district, to whom is entirely due the credit of bringing the celebrated Mooney marking to such perfection. At these shows hens only were shown, of both Golden and Silver Mooneys and Black Pheasants, but far the most usually it would be one of the Mooney breeds. The birds were judged by a Scale of Points brought out by members of these village clubs, and the points were so well understood by all that any disagreement about the judging scarcely ever took place. These village shows are now things of the past, the poultry-shows held in almost every town in Lancashire making them unnecessary; but they did work it is very difficult to estimate now. One of the foremost men at these village clubs was old Jack Andrews, or, as they call him in Lancashire, 'The Ould Poo't,' meaning 'The Old

* We make this remark because letters have reached us complaining that some of the figures of feathers we have given represent an unattainable standard. Such is not the case; in no instance have we permitted the least exaggeration.

pullet.' What precise meaning attaches to this soubriquet I never inquired, though it is evidently connected somehow with the old man's triumphs at these shows where only hens and pullets were shown; but he always takes it in good part. The old fellow is a rare breeder still; but the Hamburghs—Gold and Silver—are the only varieties he cares about, and I much doubt if he could tell even the names of many other fowls. Another fine old fancier and breeder is old Nathan Marlor; and I must say that breeders and fanciers of both the Spangled varieties are much indebted to these two men, who have been greatly instrumental in bringing the Mooney to such a state of excellence.

"Both the breeds thus described being in existence at the early time we have been speaking of, the Lancashire Mooney hens were first shown with the Yorkshire hen-feathered cocks; but when the judges began to set their faces against the hen-feathered birds (and their reign was very short), the Yorkshire Pheasant's career, as an exhibition bird, was over. After that the cocks shown with the Mooney hens were of the full-feathered Yorkshire breed; but neither variety then possessed the points of excellence required by the judges. The Yorkshire Pheasant was too dull in ground-colour and not distinct enough in the Spangling; while the Mooneys, especially the cocks, had black breasts and red ear-lobes, and if anything (especially in a room) were almost *too* deep and rich in the ground-colour. The necessary change began first with the cocks. As the Yorkshire birds were found to be too dull in colour, and it was out of the question exhibiting Mooney cocks, the Yorkshire cock was put to the Mooney hens, and thus by careful and judicious crossing a bird was produced having somewhat of the richness in plumage of the Mooney, at the same time retaining the spangled breast and whitish ear-lobes of the Pheasant. These were the cocks for some time shown with Mooney hens. After a time, however, as the competition became keener, and richness of plumage became one of the chief points requisite to success, a little more of the Mooney blood was introduced; and at the present day we possess cocks which leave little to be desired either in that point or in ear-lobes, which have been by careful breeding brought to a perfection neither breed originally had. The hens also were operated upon, the red ears of the pure Mooney being found an eyesore. To remedy this a dash of the Yorkshire Pheasant blood was introduced, which also had the good effect of giving a very slightly lighter tint to the ground-colour; and now, by this crossing and judicious selection, we possess a breed of hens also that combine all the richness of the Mooney with a slightly lighter ground-colour and the desired white ear-lobe. Both sexes thus containing some mixture of blood, are gradually approximating; and though I am bound to confess that the most successful breeders still use two pens to breed from, the distinction will gradually lessen, and we are rapidly approaching in this variety also to a strain which will breed both sexes without more difference than all varieties usually exhibit in point of excellence.

"As in the preceding variety, breeding from the pure Yorkshire Pheasant is now almost discarded. For breeding pullets I advise the beginner to get the very best hens from an exhibition point of view that he can lay his hands upon; there is not much need to inquire about the strain, as in a hen this will speak for itself. Then let him get a cock from some good breeder out of a well-known pullet strain, and if possible of the very same strain as the hens or pullets he is breeding from; for I always find that birds bred akin produce by far the most perfect specimens. Then if you find these birds produce first-class chickens, keep them together and breed from them as long as ever you can, and do not on any account attempt to improve them by a cross, or you may improve them the wrong way. If the produce is not satisfactory, try again; but this simple method of selection will rarely fail, and is about the only one which can be given at the present day.

"For cockerels pursue a similar plan. Get the very best exhibition cock you can procure,

and put him to a hen or hens obtained from some good breeder; but in choosing them you must select birds with the necessary points, viz., with smart, even combs, and pure white well-shaped ear-lobes. Here, as before, if the produce is good stick to it so long as the pen will breed; but if you do not succeed at first you must change the birds until you get what you require. Any one without such patience and perseverance will never make a fancier; and while we use our very best judgment of course, it is greatly by this experimental method the best of us make up our Hamburgh pens, until we have got a strain of our own, when of course we know its qualities, and can make up our pens with something like certainty of success.

"I will now describe what Golden-spangled Hamburghs ought to be, beginning with the cock. It will be understood that in choosing stock as above described for breeding either sex, the most important sex in each case is to be chosen as nearly approaching the following description as possible.

"The cock's hackle should be a rich golden bay, each feather striped down the centre with rich deep black; the back a deeper bay, approaching maroon, and each feather having a green-black spot, these spots getting more elongated as they get down the back, till on the saddle the hackles become striped down the centre. The red or maroon should be very rich in colour. The breast is golden bay, each feather well spangled with a rich black moon; this spangling to be very uniform, and not to overlap, but to show both black and bay; the breast to be thus spangled from the throat to the thighs, the spangling becoming bolder as it goes downwards. A laced breast is objectionable (although many of such birds win simply for want of better), but a black breast is now out of the question. The tail should be black, very full and long, and as rich in colour or green gloss as possible. The bars on the wing should be double, bold, and regular, as in the Silver-spangled breed, thin and imperfect barring being a great fault; the stepping on the wing, caused by the black crescentic spots on the ends of the secondaries, should also be good. The outer webs of both secondaries and primaries to be a deep golden bay, but the inner webs ought always to be black. The wing-bow, or part above the bars, should be rich maroon, with each feather spotted with black if you can get them so; this, however, is very seldom the case, still the wing-bow should at least be very rich, and the ends of the feathers darker, approaching to black. The comb resembles that of the preceding breed, and should be smart, full of 'work' or points, with a long spike behind slightly pointing upwards, set evenly and firmly on the head, and quite level on the top; any hollow in the middle being a great fault, as the comb is one of the first points which catches a judge's eye. The ear-lobes should be not only a clear white, but of a nice shape—as round or circular as possible, and not long or pendent, but nicely put on the face. The face is red, beak a dark horn-colour, eyes bright red, legs a dark slaty blue. The carriage is easy and graceful. Size is not of much consequence if not very small.

"The ground-colour of the hen is a rich golden bay. The neck-hackle is of the same colour, each feather striped down the centre with deep green-black. The breast from the throat to the thighs should have each feather spangled with a bold, rich, round, black moon. The tail is black, the coverts being spangled. The back should be broad, and richly spangled, and the shoulders or bows of the wings above the bars should especially be well spangled. The bars themselves are, however, the chief point, and should show plainly as two bold and regular lines of spangling, the want of which is a most serious fault, and mars altogether any other beauty in marking. The comb, face, eyes, &c., resemble the cock's; and, as in his case, size is not material provided the bird be not too small.

"Golden-spangled Hamburghs are only moderate layers in comparison to the other varieties, the pure Golden Mooney on which they have been founded being very indifferent in this respect.

"Spangled Hamburgh chickens vary in colour, the Silvers particularly so, according to the different strains, or even sometimes in the same strain. Some hatch out a light grey, others a dark smudgy grey, and striped black and grey down the back and sides; while of the Golden some are dark brown striped with black, and others very light, almost yellow. In the first feathering they also vary much in colour, some being very light—that is, the white predominating—and others dark or almost black. However this may be, in the first feather it is a blotchy black and white, without any true spangling. Many have their wing-feathers pencilled, others not, this being not an invariable rule. There is, however, never any true spangling in the first feathers, and as a rule the darkest birds in their chicken dress prove the best; but there are exceptions to this too, so that if the strain can be depended on it is best to wait for the second or adult plumage. Then it is that the true character of the bird is developed, the difference being wonderful. Now all becomes distinct and well-defined; and as the new feathers grow it can soon be seen whether the chicken possesses the requisites of an exhibition bird or otherwise."

As a rule, it will be found that the cocks referred to by Mr. Beldon, to be selected from a good pullet-breeding strain for breeding pullets, are somewhat darker in ground-colour and coarser about the head than good exhibition birds. If possible, own brothers to winning pullets should be selected; and as soon as a good strain has been formed the amateur will of course select cockerels from his own pullet-breeding strain, and *vice versa*. In no variety, therefore, is it so necessary as in either of the Spangled Hamburghs to form as soon as possible a strain of one's own.

Originals of the Scales of Points for judging Golden Mooney hens, referred to as in use at the old village shows, are now very difficult to obtain, though they were printed for reference. They have, however, been fortunately preserved in the original "Poultry Book," now rather scarce, published in 1853 by Messrs. Wingfield and Johnson, from which (by permission) we copy them, as most interesting to all fanciers even of the present day. The same table applied to the Silver Mooneys, substituting a white for the red ground.

POINTS.	MARKS OF FEATHERS, ETC., CONSIDERED BEST.
1st.—Comb	Best double; best square; the most erect and best piked behind.
2nd.—Ears	The largest and most white. [White, and a medium size. N. M.]
3rd.—Neck	The best streaked with green-black in the middle of the feathers; and best fringed with gold at the edges.
4th.—Breast	The largest moons; best and brightest green-black, most free from being tipped with white or red [omit "or red." N. M.] at the end of the moon, and the clearest and best red from the moon to the bottom-colour.
5th.—Back	The largest moons; best and brightest green-black, least tipped with white or red [omit "or red." N. M.] at the edges of the moon, and the best and clearest red from the moon to the bottom-colour.
6th.—Rump	The largest moons; best and brightest green-black, least tipped with white or red [omit "or red." N. M.] at the edges of the moon, and the best and clearest red from the moon to the bottom-colour.
7th.—Wing	This is divided into four parts:—1st, *Bow.* Best and brightest green-black, and best and clearest red.—2nd, *Bars.* To have two distinct bars, composed of the largest, clearest, brightest, and best green-black moons, and the clearest and best red from the moon to the bottom-colour.—3rd, *Flight.* The clearest and best red [quill of the feather to be same colour as the web. N. M.].—4th, *The Lacing, or top of the wing, above the flight* (now called "stepping" of the wing. Largest, clearest, brightest, and best green-black spots on the end of the feathers, and the best and clearest red from the spot to the bottom-colour.
8th.—Tail	The brightest, darkest, and best green-black. To be full-feathered.
9th.—Legs	Best and clearest blue.
10th.—General Appearance	The best-feathered hen.

In both varieties hens only were shown, the cocks being so inferior in appearance as to be only valued for breeding. The spangling was really marvellous in its gloss, as we can testify from feathers kindly sent us by Mr. Nathan Marlor, the breeder referred to by Mr. Beldon, and who also states that the corrections within brackets bearing his initials should be made in the scale as given by the "Poultry Book" to make it accord with the views of the best old village breeders.

The tendency to which we adverted at the commencement of this chapter towards a white or red tip beyond the moon, thus showing a distinct approach to pencilling in character, will not fail to be noted as clearly pointed out by these old rules. Golden Mooney hens as they become aged not unfrequently show this slight white tip on the ends of their feathers beyond the moons. Occasionally the tip is bay; but in neither case is such necessarily an indication of impure blood. A laced character, on the contrary, especially on the wing-bars, shows not only too much Pheasant blood, but that it has not been properly amalgamated—in fact, that birds showing it, if adult (chickens of very good quality sometimes do show a little lacing, but afterwards moult out correctly) are in reality badly-bred birds, and have not been produced with the care which should have been observed, as described by Mr. Beldon. The amalgamation is still going on, having made perceptible progress during late years; and so far as can be foreseen, in a very few more we may expect to see a thoroughly established and improved strain, which shall breed both cockerels and pullets alike with all the points desired, though no doubt to the very end certain families will produce better of one sex than the other, as is generally the case with every other breed. Even this, however, is in the hands of fanciers; just as we have made already a large approximation towards amalgamating the black breast now demanded for Dark Brahma cocks with the necessary pullet-breeding qualities in which that kind of cock was formerly deficient, and which therefore were and are often still sought in speckled-breasted birds.

With the exception of the tail-feathers, which in Golden-spangled birds are black, and the hackles, which are striped, the plumage is so similar to the Silvers that representations of the feathers need not be repeated.

The Yorkshire Golden Pheasant fowl* is now we believe nearly extinct, and even the Mooney hens are not nearly so often shown pure-bred as formerly, the somewhat lighter colour of what we may call the new or amalgamated strain being preferred. The showing of both has given rise to some controversy at times between the advocates of what have been called the red and the golden ground-colour. We think the truth lies entirely on neither side. Under cover, or the conditions of the show-pen, there can be no doubt of the superior effect of the lighter tint, which was deliberately sought by the best breeders for this very reason; but out of doors, especially in the sun, these birds are not in our opinion to be compared with the true-bred Mooney in point of feather, though the smarter heads and white ear-lobes give a great superiority in those respects.

REDCAPS.—Nearly all the older works on poultry describe among the Hamburghs a breed called the Redcap, for which, years ago, there was a special class at the Sheffield shows. They were chiefly confined to the neighbourhood of that town, but Mr. Beldon informs us that even there they have almost disappeared, the last he has seen having been at a Sheffield show some years ago. They appeared to be a kind of mongrel Golden-spangled, larger in size, and with *immensely* large rose-combs hanging over at the sides. They were reputed to be hardy fowls and

* It will of course be understood that the Yorkshire Pheasant breeds so frequently referred to have no connection with the pheasant itself, but that the term is merely a local *name*. Hybrids between the pheasant and fowl are common enough, but, like other hybrids, are almost always sterile, and quite incapable of founding a breed. The name was evidently given from the similarity of marking of the breeds in question to those of the pheasants.

good layers. In marking, Mr. Beldon says, "they are like a very bad Golden-spangled, being a kind of brown ground with sooty black half-spangles, and I see nothing to attract about them. I have no doubt they are good layers, but they can hardly be any better than our Silver-spangled breed." We know of no source now whence this Redcap Hamburgh can be procured; but were the Yorkshire Golden Pheasant bred with sole reference to size, laying qualities, and extra development of comb, a breed so like it would be produced that we have no doubt whatever such was the origin of the variety.

The fowl was, however, a most useful one, answering to the American Leghorn in productiveness and hardiness; and it will be a pity should the stock be altogether lost. Mr. Hewitt entertains the very highest opinion of them as "general utility" fowls, as the following interesting notes will show. "Of the Redcaps," he says, "I can without hesitation speak most favourably, both as regards the production of eggs and also their value as a table fowl. I never kept them myself, but have been intimate with several parties who esteemed them most highly, long before the time that poultry exhibitions were instituted in the Midland Counties. To a poultry amateur, whose eye has been previously tutored to the most important traits of character in Hamburghs generally, the Redcap at first sight presents nothing less than a mass of general disqualifications, as such parties very unjustly form their opinions by comparison with the code of rules by which the value of other varieties of Hamburghs are estimated. Although the very profuse rose-comb, lounging in a very ugly manner, the partially pendulous and very red ear-lobe, the just barely crescented feather, in lieu of a spangle, and the want of sprightly motion, so characteristic of all the Hamburghs, are far from ornamental, added to which the ground-colour is anything but as sound as could be desired by the party whose search is exclusively for beauty of exterior, the compensation for these shortcomings is profuse; for they are really a weighty and thick-bodied fowl (cocks reaching seven pounds and a half), of good flavour on the dish, and if the eggs are weighed, as well as counted, I believe them to be the most abundant egg-producers of all our domestic poultry. In reference to their eggs, I will mention a fact, and to which my attention was first directed by one of the oldest and most practical Birmingham confectioners. If after being broken the same weight of eggs are used from Redcaps and Spanish fowls, the consistency in custards and so forth obtained from the first-named breed proves nearly one-third greater than from those of the Spanish. To such parties as use considerable quantities of eggs for confectionery purposes, this peculiarity of the Redcap's makes them much sought after; and, I may add, each individual egg, when the fowls are well attended, is as fine and noble-looking a specimen as could be desired.

"Redcaps are very hardy fowls, very rarely stop laying through stress of bad weather, and the eggs laid, even under adverse circumstances, are generally strong-shelled, thus comparing very favourably with some of our best known laying varieties when similarly situated. Reputedly they are non-sitters, though I have witnessed a few cases of undoubtedly purely-bred birds sitting, and perseveringly hatching out good broods; but I never knew even a solitary instance in which they took proper care of their chickens when they had hatched them, but left them to die, through the want of hen-like care and attention."

Redcaps might possibly be obtained through some of the Midland higglers or poultry dealers, and as stock for a farmer will stand in the very first class, the meat being of most excellent quality. Ornamental they can hardly be called, many of the cocks appearing to have the power of throwing over the comb to either side of the face at pleasure; but their fine size and that of their eggs present the useful qualities of the Hamburghs without their most obvious deficiencies.

SILVER-PENCILLED HAMBURGHS.—"This breed and the following," observes the same authority already quoted, "are somewhat smaller and lighter in make than the Spangled varieties. In Yorkshire it is often known by the name of Chittiprat, and in Lancashire by that of Bolton Greys, but these and all other names are gradually giving way to that of Silver-pencilled Hamburghs. I will first describe the proper markings of the breed.

"In the cock, the head, hackle, back, saddle-hackle, breast, and thighs should be a clear silvery white, the yellow tinge which is so often seen being a very grave fault. The tail proper is black, the sickles and side or furnishing feathers being a rich green black edged with a fine white fringe, the finer and more sharply defined the better. Many birds have a sort of marbled tail, which is very objectionable; others have the sickle-feathers splashed with white, which is also a grave fault, the only white which should be in the tail being the fine white edging merely, which is clearly shown, with the other important markings of the cock, in the plate (Fig. 85)—the sickle is drawn more bent than usual, in order to get it within the plate. The wing appears almost white when closed; but the inner webs of the wing-coverts should be very darkly pencilled when examined (for which again see Fig. 85), and a fine black edging should be observable on the wing-coverts, caused by the ends of the *outer* webs being also slightly tipped with black, and giving the appearance of a slight and indistinct bar on the wing. If this point is not observable it is a great fault, and such birds should never be bred from; on the other hand, this barring should not be too distinct or heavy, as such gives the bird an appearance (very often correct) of being crossed with a coarsely-pencilled strain. The colour of the secondary quills is also important. On the outer webs they are white, except a narrow strip of black next the quill, which is of course only discernible when the wing is opened out, the white only being seen when closed; the inner web is black, all but a narrow white or greyish edging. In some birds the colour is a sort of black and white mixture or marbly appearance, and not nearly deep enough, especially on the inner web. Such birds have been bred from indifferently or lightly-pencilled hens, and are of no use at all to breed from, at least if you expect to breed pullets as well as cockerels. On the fluff of the thighs are some black spots or pencillings; but with this exception and those already stated, the entire plumage should be white. The comb, ear-lobes, legs, &c., should be much the same as described for the Spangled, but somewhat smarter in appearance. The eyes to be a bright red.

"The neck-hackle of the hen also should be pure white, free from spots or pencilling, though hackles somewhat marked are very common. The rest of the body should have each feather distinctly marked or pencilled across with bars of black, as clear and distinct as possible on the white ground, and in particular as straight across the feather as possible. The 'finer' this pencilling, that is, the more numerous the bars across, the better. This pencilling should extend from the throat to the very end of the tail. A tail well-pencilled is a very great point, as there is a special tendency in the long feathers to lose the straightness across of the marking; but tails pencilled squarely across to the very tip can be and are bred, though never common. A very usual fault is a light breast, or if not light only covered with large horse-shoe markings, both being grave faults. The birds best marked on the breast are often a little inclined to be spotted on the hackle, and this latter fault is certainly to be much preferred to a bad breast. The best marking on the breast is never however quite equal to that on other parts of the body. The proper marking of the pullets is shown in Fig. 86, which is drawn carefully and without any exaggeration, from actual feathers.

"The pencilling or marking, as said before, should be as fine and as straight across the feather as possible; and especially, the rows of pencilling on one feather falling on to the rows on

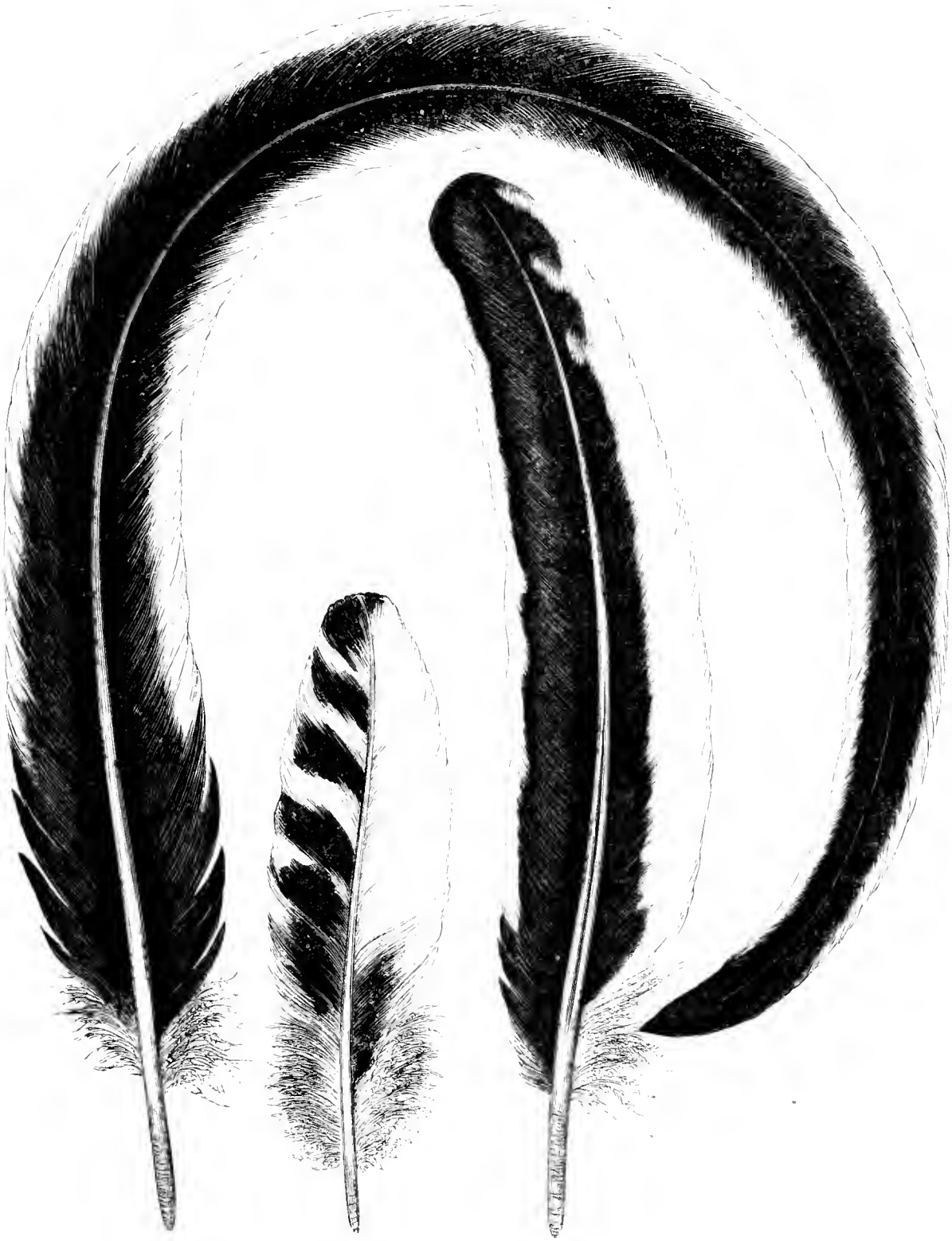


Fig. 85.—FEATHERS OF SILVER-PENCILLED COCK.

the next, so as to give the bird a ruled or lined appearance, which has a very pretty effect. A coarsely-pencilled bird is not to be thought of in these days, having a spotty or speckled appearance which is not the correct thing at all, though formerly such birds were the rule. By careful breeding, however, a race has now been produced which leaves little to be desired, though I must own that one point we have yet to obtain in the hens, and that is a pencilled wing, which is as yet almost devoid of pencilling. I hope, however, we may get even this in time.

"The pencilling is generally much the best the first year, or as pullets. Afterwards, as a rule it becomes somewhat mossy, cloudy, or indistinct, and often coarse. Some birds, however, will

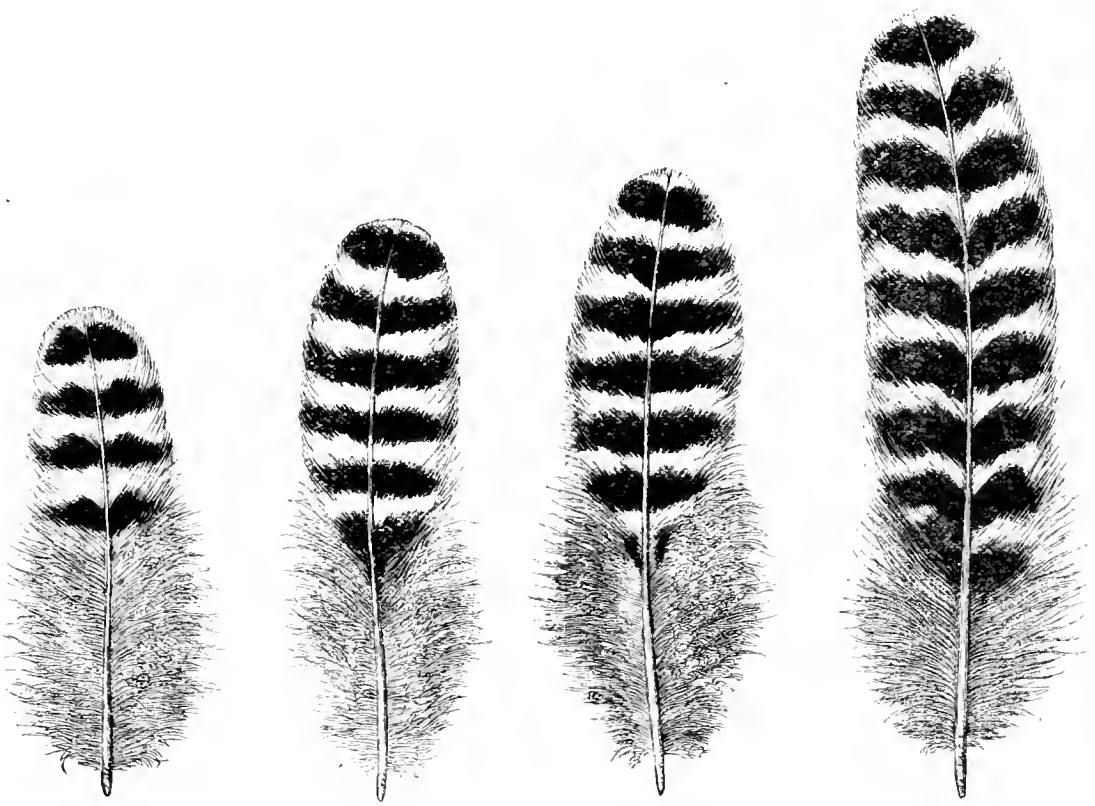


Fig. 86.—Feathers of Silver-pencilled Hamburgh Pullet.

moult out well the second season, and such should be specially valued, and by all means retained for breeding.

"In breeding this variety the same birds should breed both sexes of good quality, if the stock is chosen with judgment; two sets not being required, though some breeders use such. Of course, as I have before said, there will be, as in all varieties, some families that produce better of one sex than the other; still there should in this case be no great disparity in the quality of the male and female birds, and for myself I prefer to breed from one set. It is, however, possible to breed very good show cockerels from hens with no quality of pencilling at all; and therefore, in making up a yard, it is very essential the strain of the cock bird should be thoroughly ascertained to be a well-pencilled one. As for the hen, she will speak for herself. It is satisfactory to see that our most popular judges favour those cock birds that possess the points most likely to produce good pullets; and if

such a bird comes of a strain known to produce good pullets, of a pencilling similar in character to those of the hens he is to be put with, it is sufficient. His tail should be perfectly black, and the sickles likewise black, except the clear white edging, which on no account should be grey. The bars on his wing should be perceptible, but slight, and not too plainly visible, though the wing-coverts which form it must be darkly pencilled on their upper webs. If there be too little colour here the pullets will lack colour also; and if, on the contrary, the bar be too dark, the pencilling will most likely be coarse, heavy, and spotty."

Our impression is that the majority of Silver-pencilled Hamburgh breeders breed their cockerels from different pens to their pullets. For cockerels they match a good show-bird with hens much too light in the pencilling to be fit for the pen, tolerably marked, but the marking not heavy enough; while, on the other hand, they will often mate with their best hens cocks or cockerels with perfectly black tails, and with black about the body. The disadvantage of such a plan is, that neither strain thus produced can be relied upon to breed in any other way, and many of the pullets hatched, even if they do not show the approach to black spangling already referred to, are apt to present a coarse appearance, from the markings being too broad and heavy which the best breeders have been doing all they can to banish. On the other hand, a cock from a reliable strain, with properly laced sickles, slightly perceptible bars which show good dark pencilling underneath on examination, and plenty of black in the secondary feathers, will breed pullets all that can be desired, as well as reproducing his own likeness in the cockerels.

First-rate Silver-pencilled cocks will sometimes, as they get old, show a chestnut patch upon the wing. We remember one of the very best show birds we ever saw moulting out thus after winning thirty-seven prizes, and the fault used to be common in aged birds; but by rigorously excluding such from breeding, it is now seldom seen. Birds which do show the chestnut patch should never be bred from.

GOLDEN-PENCILLED HAMBURGHS.—"This variety," continues Mr. Beldon, "is in every respect save ground-colour similar to the Silver-pencilled breed. The ground-colour in the hens should be about the colour of gold, as rich and bright as possible; the pencilling being exactly like the preceding variety, as distinct and yet as fine as can be got; that is, as many bars as possible across each feather, provided they are distinct and of a good rich black colour. The neck-hackle, like the Silver birds', should be clear. The cock is of a deeper tint, his colour being somewhat between that of his own hens and of a Red Game cock; it must be neither too red nor too pale, but what might be called very rich in effect. His proper tail-feathers are black, the sickles and hangers rich black edged with brown or bronze, the edging being rather wider than in the Silver-pencilled bird. To have sickles all black is a great fault, and so is a tail bronzed all over, or with scarcely any black in it, but bronzed almost all over the sickles. This last kind of tail is very showy, and used to be rather a favourite with some judges who did not understand Hamburghs; but experience proves that birds possessing it produce very indifferently pencilled pullets, and the judges on that account now throw them out.

"Besides the quality of the black pencilling, which resembles the Silver-pencilled, one of the great points in this variety is the evenness and richness of the ground-colour. Some birds, otherwise good, are very uneven in this point, the ends of the feathers being a lighter gold than the other parts. Such birds, as the season advances, are apt to get still more faded and washed-out in appearance, and, indeed, most birds fade in colour from the effects of the sun; but some hens of a good rich colour retain this much better than others, which, is of course, a great point in their favour. In the cocks the same fault is commonly seen, appearing in the shape of a lighter shade

on the ends or tips of the feathers on the breast and under parts of the body; this is to be avoided as far as possible—the more uniform the colour the better.

"The breeding of Golden-pencilled Hamburghs is in all respects precisely the same as the Silver-pencilled, allowing for the difference in ground-colour. The same markings on the feathers are to be sought exactly.

"When hatched, Golden-pencilled chickens are a buff colour, darker than the Silvers, with a few black spots about the head. The Silvers are a pale buff. They show the pencilling in their first feathers, the cockerels being pencilled nearly like the pullets. Some breeders prefer to select a cockerel for breeding in either variety at this stage, and no doubt the character of the pencilling he will breed with good hens can be readily seen in this way. The full beauty of the marking does not however show itself till the second or adult plumage makes its appearance.

"Both varieties of Pencilled Hamburghs are delicate, and should not therefore be hatched before April. In the case of the Silver variety there is another reason for not hatching early, in the fact that if earlier they often moult out like old hens at the time they ought to be laying, and thereby loose that sharp and rich pencilling for which the pullets are almost always superior."

All our Hamburgh plates have been drawn from first-class specimens; but the Gold-pencilled in particular were the most perfect birds we can ever remember to have seen.

BLACK HAMBURGHS.—"This variety," Mr. Beldon writes, "had long been known in Lancashire previously to the poultry-showing era, but the fowl we possess at present without doubt has some Spanish blood in its composition. This cross was introduced to obtain the white ear-lobe, which was, and is, so very desirable; but the drawback was the white face introduced with it, and which would show itself for a long time. By careful breeding, however, this has been to a great extent bred out, and the majority of the birds shown at the present day have red faces. Of course, the white face will now and then crop up, even now, but it is a blemish, and one the judges will not tolerate.

"This variety is, perhaps, one of the most useful fowls we have. It lays as frequently as the other Hamburghs, but the egg is much larger, probably on account of its relation to the Spanish. Being a black fowl, it can also be kept in the neighbourhood of towns, provided only there be the good-sized grass-run which is needed to do justice to this as to all the other varieties of Hamburghs. In size it is larger than the others, although different birds vary, and size is not very essential if of fair average and symmetrical in make. In shape they should resemble the Spangled Hamburghs, and not be thin and stilty like the Spanish, a point which always shows a bad descent. The legs are a dark leaden blue the first year, which gradually becomes a slaty blue; the comb, face, ear-lobes, and eyes should resemble the Spangled Hamburghs. The colour is a rich satiny green black, the greener and richer the colour the better; and this green gloss should be uniform, and not showing on the end of the feather only, but throughout the plumage. This beautiful gloss shows itself more in the hens than in the cock, which is contrary to the usual rule. To be seen to advantage they should be viewed in a good light, or when the sun is upon them; you then see that beautiful sheen in which they surpass all other black fowls. Some are purple or raven black, but the colour required is the green black.

"The chickens when hatched are white from the throat downwards to the under part of the body, the rest black. As a rule, they do not become thoroughly black till they get into their second plumage."

Other breeders exceedingly dislike the Spanish cross, though we must say that half the birds exhibited show evident traces of it. The Rev. W. Serjeantson has long been known as a special

cultivator of this breed in its purity, having never we believe crossed his birds; and as none have been more successful with it in the show-pen, it proves that careful and judicious breeding can do all that is necessary. At our request he has added the following very full notes on his favourite variety, which will fully convey to the reader the means by which his great success has been attained.

"It is only within the last few years that Black Hamburghs have come into fashion. Indeed, ten years ago they were scarcely known out of Lancashire and the West Riding; but for all that they are by no means the 'recent invention' which the editors of some of our poultry periodicals would have us believe. I must confess to ignorance myself as to the origin and early history of the breed, but I am glad to be able to supply my deficiency with the following information which Mr. Teebay has very kindly sent me. He says:—

"'I have known the Black Hamburghs ever since I was quite a boy. I do not exactly recollect whether the Silver Mooneys or the Blacks were the first fowls I possessed, but I believe the Black Pheasants, as they were called here. Both kinds, and also the Golden Mooneys, I have been told by reliable persons were exhibited for prizes, such as copper kettles, &c., more than a hundred years before my time. I have yet somewhere in the atties of my house about a dozen prize copper kettles, and many others have been given away to friends.

"'The Black Pheasants were not formerly so elegant in shape as they are now. Little regard was paid to symmetry, but the most weight was given to the resplendent green shade; the ear-lobe was smaller than it is now, and the face a brilliant red. I have known Silver Mooneys produce chickens almost black, and as the old Blacks were exactly of the same shape as the old true Silver Mooney, I always thought one had sprung from the other. The true Silver Mooney chicken is almost black in one stage of its chicken plumage. The Black Pheasant formerly was much shorter in the leg, in fact, shorter in all its parts than the birds we now see.

"'I do not think that crossing with Spanish has caused this alteration; but that it has arisen in most cases from breeders paying more attention to shape than the old fanciers used to do. There is no doubt some strains have a little Spanish blood in them, but these are generally very coarse in comb, with dark faces, inclined to white below the eye, a drooping ear-lobe, and are not nearly so elegant a bird as the true kind.'

"As Mr. Teebay is admitted to be one of the best authorities upon all the varieties of Hamburghs, his most interesting letter is a conclusive answer to those who say that they are a cross between Golden-spangled Hamburghs and Spanish. No doubt some Black Hamburghs, or rather imitations of them, have been concocted in this way; but the unfortunates who get any of these 'cross-breeds' into their yards will not be long in discovering, in single combs and a general want of fixed characteristics, that they have not got the pure breed.

"It will be seen that Mr. Teebay considers them to be closely connected with the Silver Mooneys, and I think myself that that is very probable. However, as they can show a pedigree of considerably more than a hundred years, it is not of great importance from a practical point of view what was their origin in the first instance; it is enough to know that they are now a firmly established breed, of great beauty and undoubted excellence.

"In shape they should be what their name implies—Hamburghs, and not rose-combed Spanish or Black Dorkings. They often appear at exhibitions in the guise of heavy, square, loose-feathered, Dorking-like birds, with coarse heads and combs; or, on the other hand, long-legged, narrow-bodied, and squirrel-tailed, so that one is not surprised to hear the unitiated spectator remark, 'Why, they are very like Spanish.' They should be *real Hamburghs* in shape, with prominent breasts, legs small-boned, taper, and short, though not so short as to give a dumpy look; they should also

stand up well upon their legs, but yet without showing the whole of the thigh, like Game. The head should be small and neat. Judges do not seem to care about the colour of the eyes, but I myself much prefer a full dark eye to a lighter-coloured one. The neck-hackles should be long, flowing well over the shoulders and back. The tail should be long, full, and sound-feathered, carried well up, but not too forward, a squirrel-tail being very objectionable.

"Mr. Tegetmeier has stated that their combs are better formed than those of any other double-combed breed; but that, I think, is an opinion which will not be endorsed by Black Hamburgh breeders, who all find the comb one of their *difficulties*. The combs of pullets especially are apt to '*go over*,' as they approach the period of laying; but still, with care in the selection of stock-birds, this is a difficulty which may with certainty be surmounted.

"The ear-lobe is a very striking feature in a Black Hamburgh. It is allowed to be a little larger than in the other breeds; but it must be pure white, round, smooth, like a piece of a white kid glove, lying close to the head, not long and pendent, not puffy, not wrinkled, nor edged with red.

"The face should be brilliant crimson, almost scarlet, or deep carmine; a dark gipsy-face being a great blemish, and a white face altogether a disqualification. Both Spangled and Pencilled Hamburghs are subject to white face, as well as the Blacks, but in the latter it is much more common; white patches under the eye and near the ear-lobe frequently making their appearance, especially when a bird is out of condition or old. Indeed, it is rare to find a two or three-year-old cock *quite* free from it. But this is another fault, which may be obviated entirely by careful breeding.

"The legs should be of a *dark* leaden hue; they get lighter with age, but in a young bird a light-coloured leg is to be avoided.

"A Black Hamburgh, if a good specimen, is a most attractive bird. The bright crimson comb and face, the snowy ear-lobe, and the lustrous green of the plumage, form altogether a *tout ensemble* such as no one can see without admiring. Indeed, I have often been surprised to hear lady visitors, when looking through my yards, express greater admiration for the Blacks than the Silver-spangled Hamburghs; these latter being, to my mind, the most striking of all fowls at first glance.

"In a Black Hamburgh cock the breast, back, shoulders, and tail should be of a rich green, the brighter the better; the wing-coverts (which form the bar of the Spangled Hamburghs), exceedingly brilliant; and the outer web of the secondaries—*i.e.*, the whole of the lower part of the closed wing—almost as bright; the lesser tail-coverts are also very rich in colour.

"There are two distinct shades of colour. Some strains are of a deep *blue* green, almost a steel-blue—these have green tails; other strains are of a lighter green—these have bronze green tails. I much prefer these latter myself; but anyway, the purer the green, and the less admixture of purple or any other tint, the better. Many birds are more or less pencilled with bluish purple, or, as the Lancashire fanciers call it, '*mazarine*;' hens chiefly on the back, and cocks on the flights and tail. I believe it is sometimes caused by weakness or ill-health at the time of the growth of the feather, as I have known birds, which as chickens were quite free from this defect, show it after a late or protracted moult; but more often it is hereditary, and I should not care to breed from a bird which showed it to any extent. The hackle and saddle should be deep black, the longest feathers having the centre or main part bright green, and the outer edges or 'hackly' part of the feather (so to speak) black; the thighs and under parts also black. I think I ought to add that it is rare to find a cock as richly coloured as I have described, very few showing much colour on the breast or hackle. The hen should be of a bright glossy green throughout, especially on the wings

and back. Mr. Tegetmeier speaks of spangling being visible; all I can say is that I have examined birds in all lights, and I have never been able to see on a *good* bird anything of the sort.* The *whole* of the feather, except the fluffy part, should be uniform in colour; the green cannot be too *pure*, and the less of blue, or purple, or plum, or mazarine, the better.

"As regards breeding for exhibition, it is one great advantage of this variety that prize birds of both sexes can be bred from the same parents; at the same time, wherever there is convenience for doing so, it is advantageous to have the breeding-stock divided into two or more separate yards. You have more strings to your bow; you are more independent of your neighbours as regards fresh blood; and moreover, it is very difficult to find a cock in which are united all the qualifications for breeding both sexes.

"In the selection of breeding-stock the faults to which Black Hamburghs are most liable should be kept in mind. These are ill-shapen combs, white faces, legginess, red hackles and saddles. I believe all black fowls are subject to this last defect, but Black Hamburghs are so especially, and the richer colour the bird, the more likely the red is to show itself. Now at an exhibition, colour does not seem to be looked for by the judges, in cocks especially, so much as the other points; not nearly so much in my opinion as it ought to be, though, of course, *cæteris paribus*, colour will carry the day; therefore, for cockerel breeding, parents should be chosen with *perfect* combs, good red faces free from white, round white ear-lobes free from red, hackle and saddle *perfectly* free from red, short legs, broad back and chest (narrow-bodied birds too often being squirrel-tailed, which is most objectionable, and generally hereditary). Want of colour is not of so much consequence.

"On the other hand, for breeding pullets, a cock must be sought for with as many of the above qualifications *as can be found* united with very brilliant colour. As I have already said, it is difficult to find a very rich cock quite free from red; but colour you *must* have for breeding pullets, and I would much rather choose for the purpose a red-hackled cock, if good in other respects, than a dull-coloured one. I have often bred beautiful lustrous pullets from hens with very little colour, when mated with a bright cock; but never from a dull-coloured cock, however lustrous the hens with him might be.

"I am sorry that I cannot give any statistics as to the laying powers of Black Hamburghs; I have never kept any written records. But there can be no question as to their excellence in this respect. I have given away many to neighbours and friends, and they have almost all expressed astonishment at the numbers of eggs produced by them. The pullet which is so faithfully represented by Mr. Ludlow in his excellent picture, began to lay in the beginning of November. She was exhibited several times during the winter, which of course stopped her laying for the time, but she commenced again as soon as she was left in peace, and continued laying until the end of the following November, never having shown any inclination to sit. Most poultry-books say that Hamburghs *never* sit; but according to my experience that is quite a mistake, at all events as regards fowls which have unrestricted liberty. I have kept Spangled, Pencilled, and Black Hamburghs, the purest strains of each, and every year I have had more or less hens of each variety broody. Some individuals, like the pullet mentioned above, never attempt to sit; others will be broody two or three times in a season. I have not often allowed them to sit, wanting

* Mr. Tegetmeier's mistake evidently arose from examining birds bred by crossing Spangled Hamburghs with Spanish. Many so-called Black Hamburghs are thus produced, and we have even seen such breeding *recommended* and described in poultry journals as the correct procedure. Such cross-bred birds will show the iridescent green spangle Mr. Tegetmeier describes, but which can never be distinguished on good birds of a pure strain.

them for other purposes, but whenever I have done so I have found them quite as steady, and quite as good mothers, as the regular sitting breeds, though this again is contrary to the generally received opinion.

"As a rule all my fowls enjoy perfect liberty, but during the breeding season I am obliged to keep some confined, and these I have found to lay well, remain healthy, and apparently quite contented, in yards about sixty feet long and ten feet wide.

"There is no trouble in preparing Black Hamburghs for exhibition; they require no washing; the smoke of a town does not spoil their good looks. If they have a good grass-run, and are not injured by over-feeding or over-showing, they are always ready at a minute's notice to be put into their travelling hampers. They are also less subject to roup than other Hamburghs, and when they do bring it home with them from a show, they seem to recover more quickly.

"They are, of course, subject to the same drawback as other Hamburghs; *i.e.*, the cocks are never so good for showing after their first year. The ear-lobe loses its smoothness, and, to some extent, its purity of colour. Mr. Beldon seems to have the knack of bringing out old birds in better condition than any one else can do; and I fancy it may be due to his birds being kept more under cover, and therefore less exposed to be scorched by the summer sun.

"In conclusion, I will only say that in my judgment there does not exist a more useful, handsome, or profitable breed of fowls. They are undeniably good layers of fair-sized eggs. They are very good upon the table. It is true they are not so large as some breeds, but neither is their appetite; and I believe, if the quantity of food consumed is taken into consideration, they will show a better balance-sheet at the end of the year than some of their bigger brethren."

Besides the standard breeds of Hamburghs and the Redcaps already mentioned, various other kinds of marking have appeared from time to time at particular shows, or have been seen by individuals at different times. Amongst these have been a Silver Hamburgh beautifully *laced*, which has been seen by Miss Watts; but as these birds were described as being very small, and have never appeared since, it seems to us very probable they were either a cross from the Silver-laced Bantam, or perhaps even a large pen of that variety with a full-feathered cock. There would, however, be not much difficulty in producing a real laced Hamburgh if such were desired, by choosing and developing the crescentic marking of the old Yorkshire pheasant, till it was brought up to the required standard, as in the Polish fowl. A Black Hamburgh *laced with white* has also been spoken of, but its authenticity is doubtful, as there is no certain record of such a marking having ever been seen in any variety of fowl whatever. All buff, without any pencilling or spangling at all, has also been seen, but never, we believe, shown. A variety the colour of which was buff pencilled with *white* appeared on several occasions at shows many years since, but was never encouraged, the effect not being pleasing. It was very probably formed by crossing Golden-pencilled with White, as in the case of Chamois Polish fowls. Pure White Hamburghs have not unfrequently been seen, and Mr. Beldon informs us were formerly bred true to feather, but of late years have died out; their points were the same as other Hamburghs, except being pure white all over. They used to be rather wanting in whiteness of deaf-ear, but this could easily have been corrected. They were rather pretty, and could readily be bred at any time by selecting the lightest Silver-pencils. The most worthy of preservation of all the extraneous varieties is, however, the Cuckoo Hamburgh, described in the following notes by Mr. Beldon:—

"I used," he says, "to have a breed of Hamburghs that were very handsome, of a cuckoo colour. They had all the characteristics of Hamburghs except the colour being cuckoo, both cocks and hens being alike. As usual in any variety of this marking, some of the cocks had red in

their saddles, while others were free from it. [This is a common fault in all cuckoo or Dominique varieties.] They were capital layers, and in my opinion a very pretty breed, but found no favour at the shows, and therefore have nearly died out. They bred very true to colour, indeed the cuckoo is very easy to breed if you once get it on one side, and by a cross with some other variety the points might have been worked up well." We are inclined to think a cuckoo-colour might meet with more favour now than formerly, some other varieties having made it rather more familiar and popular than in old times.

Silver-pencilled Hamburghs were formerly termed Creoles or Creels in some localities (evidently from the mingling of black and white in the plumage); and an American poultry magazine published in 1873, gave a short description and engraving of a pair of birds under this name. In this case, however, the fowls were evidently bad or ill-bred *Spangled* Hamburghs—*i.e.*, bred larger and coarser by the sacrifice of feather. Such birds, like the Redcaps, are often extraordinary layers.

Mr. Serjeantson has already stated that Black Hamburghs will do well in runs of only moderate size, and we have also known Silver-spangles maintain their high qualities in small yards, provided they were on a dry soil and kept *rigidly clean*, which is absolutely essential to them under such circumstances. The other varieties are only adapted to a grass-run, and lose much of their prolificacy if penned up, being also then subject to roup and other diseases, though when at large the Spangles at least are tolerably hardy fowls. Their great merit of course is as layers, though the meat is excellent so far as it goes. As a layer and table fowl combined the Redcap is probably one of the most profitable that can possibly be, though it lacks those charms of beauty which render the other varieties so attractive. Crossing is not to be recommended in these breeds; but if resorted to, the best is that between a Silver-spangled cock and a Light Brahma hen, which often produces spangled fowls of considerable size and very great beauty. We have sometimes thought a large and handsome spangled fowl might in this way be produced and perpetuated. Chickens of this cross are excellent layers.

Hamburghs require very little to prepare them for exhibition, neither looking well when fattened, nor submitting to the process. They need nothing more than to be in brilliant condition as regards plumage and ear-lobes. Confinement under cover will make a great deal of difference to the ear-lobes of the cock, which become rough and tinged if exposed; and is almost necessary if *old* cocks are to be shown, as the deaf-ears of old birds left at large generally become rough and coarse. The pens should not be less than six or eight feet square, and of ample height, so that the birds may be able to fly up to the perch for exercise. Darkness is not intended, but only to screen them from the wind and sun, which will rapidly improve their appearance; and all cocks, Mr. Beldon says, should be thus put up for about a fortnight, to get them to look bright, as well as used to the pens. The hens should not be put up, as they cannot stand it, but go back in condition; but those which are to be shown should always run together first, and be first tried in a pen to see if they agree. Hamburghs are not generally a pugnacious breed; but it is a singular fact that of the many cases of injury from fighting during exhibition, and particularly of one hen or pullet being scalped by the other, more have been observed by us in the Hamburgh classes than any others; though it must be remembered that Malays and Game are rarely now shown in pairs at all. On one occasion we saw at Birmingham a beautiful Silver-pencilled pullet with a hole pecked right through the skull to the brain. The prevention of such disasters is so simple that there is really no excuse for its being neglected. All the Silver varieties require of course to be washed, which should be done two or three days before the show. The birds, however well washed, will always look much purer in the White, and even Gold-pencils will keep a richer colour, if they can have a nice shady run in the shelter of a wood or piece of shrubbery or orchard.

We may remark that the purest strains of Hamburghs will occasionally produce birds with single combs, particularly if the smallest and best combs be bred from. This is evidently a case of reversion to the type of some ancient progenitor of the family, and is no proof whatever of a cross in the strain. Such birds will generally breed the proper type of comb; but, for obvious reasons, they should not be bred from, or the tendency will of course increase.

JUDGING HAMBURGHS.—The points to which a judge has to give attention in judging Hamburghs may be ranged into four great divisions, viz., 1, Marking; 2, Combs; 3, Ear-lobes; 4, Symmetry. All of these are important; and symmetry in particular should by no means be overlooked, since it is one of the chief beauties of all the Hamburgh breeds. Tastes differ, and we know many who consider the Game the type of beauty as regards form; but for our own part we must admit that a perfectly-shaped Hamburgh cock, particularly of the Pencilled breeds, is to our own eye far superior—indeed, a very ideal of beautiful contour. Of the other three divisions, all are more or less frequently made the subjects of deceptive practices, and in *no* breed does "trimming" require such lynx-eyed vigilance on the part of the judge. Ear-lobes are painted white; combs are cut and otherwise maltreated; false tails are fastened in; and in the case of the Spangled breeds we have seen a pretty good basketful of feathers abstracted from one pen of prize birds, which were too heavily spangled, and needed "thinning-out" in order to show sufficient of the ground-colour between. This last fraud is very difficult of detection indeed, and, in fact, almost impossible of absolute proof; and even the fastening in of false sickles cannot be detected in every case without manipulation such as a judge hardly feels justified in using, for fear of injuring the plumage of a really honest fowl. The Silver-pencilled cocks are most frequently subject to this latter fraud, a *perfectly* edged tail being by no means easy to produce, and not unfrequently, when it is, combined with a bad comb, with somewhat too dark body-colour, or other faults. When, therefore, an unusually fine pair of sickles are produced, whether on a good bird or a bad one, they are, by unscrupulous exhibitors, frequently transferred or preserved—as the case may be—"for other uses." The fraud is generally detected in the end, either by the fastening "coming loose," or a little want of freshness, or some other cause arousing the suspicion of the judge; but we have known a man boast when thus discovered that the false tail "had done pretty well after all, for he had won with it eleven times." A very dark, glossy, sharply-edged tail, if found on a cock with very slight bars and little under-colour, or perhaps with no bars at all, should always excite suspicion; and this is perhaps the only hint which can be given; though if the sickles look dull and dead in colour while the rest of the plumage is brilliant and glossy, attentive curiosity may also be occasionally rewarded by unexpected discoveries.

It is, however, in the combs that Hamburghs are subjected to the most extensive manipulation, and some of the practices which have actually been detected are of the most cruel nature. In one notorious case the judges took from a comb two large needles, which had been inserted longitudinally to keep it from falling over. These needles were so rusted in that they were removed with difficulty, and were only detected by the end of one protruding, so that the duration of the torture inflicted on the unfortunate bird cannot be known. Pins, temporarily inserted, have been found in plenty. A very common fault is a hollow or depression in the centre of the comb; and this has been known to be treated by cutting a wedge-shaped piece out of the middle, and stitching the outside portions tightly up together till joined and healed. Stitches put in for one purpose or other are often found, and, we regret to add, are employed far oftener than found, being withdrawn just before sending the bird in—indeed, our impression is that it is to simple forgetfulness of this necessary precaution discovery is often due. Minor irregularities are simply shaved off, and we

rarely walk down a large class of Hamburghs without seeing evident signs of this process, while experienced Hamburgh judges might see many more which our untutored eyes would never suspect. These various practices make the task of a conscientious Hamburgh judge one of unusual anxiety and responsibility. It may be thought that we exaggerate: let the following indignant sentences from Mr. Hewitt, received since our own remarks were written, testify that unhappily it is not so. Our only doubt has been whether it was well to mention these things, lest they should suggest to any one expedients he might not otherwise have attempted; but, as in other matters, we have come to the conclusion that fearless truth is best, and that any such evil which might arise will be more than counterbalanced by the probability of more frequent detection. We trust this may be the case, and hope yet to see the day when some scoundrel shall be *lynched* if convicted of such practices as we here speak of. Only the other day (March, 1873) a poor woman was punished with hard labour, justly enough, for cruelly cutting off a hen's comb in a mere fit of ill-temper, and we do think the Society for Prevention of Cruelty to Animals might do worse than devote a little special attention to the cases from time to time exposed in the poultry journals of such deliberate barbarity as Mr. Hewitt here describes.

"Among the many fraudulent practices resorted to by trimmers," he says, "none perhaps are so basely cruel as one of which I have met with many instances; namely, forcing pins and needles lengthways through the combs, to support them in an upright position. Imagination fails to depict the intensity of suffering thus produced; but as this abominable cruelty is rarely put in practice until the very eve of the arbitration, it may frequently escape the vigilance of the most practical judge. On the second and subsequent days, however, the intolerable inflammation is noticeable at even the most hasty glance, and I have seen a fowl in its agony bend the head down, raise its foot, as with the intention of relieving the comb by scratching it, stop the movement midway without touching its comb at all, and then tremble like an aspen-leaf. My conviction is that at this stage of injury the comb has become as highly sensitive to pain as the foot of a gouty patient, and that it shrinks as involuntarily from the slightest approach as would a gouty grandfather from the romping advances of his pet grandchild. I have known a Hamburgh, when thus mercilessly treated, scream long before the hand touched it, and when removed from the pen the comb, as also the scalp, proved greatly swollen, and the inflammation proportionately intense. In another case suppuration had ensued, and after the extraction of portions of *two* different pins, fully half a thimbleful of feculent matter exuded from the wound. I cannot find words to characterise my individual opinion of such heartless depravity, so will not attempt it, but I shall certainly continue to disqualify and expose any future cases coming under my observation, regardless of the social position of the owner, or a natural inclination on my part to avoid giving offence to any one. Occasionally the combs of Spanish cocks have been forced upright by a stocking-needle, and thus sent to our exhibitions, but this is at best a bungling remedy, as in a single comb the artifice is far more readily discoverable by an arbitrator than in that of the naturally less transparent double comb of the Hamburghs. In every doubtful case I would suggest to judges a close scrutiny in the hand; though suspicion will, if carefully examined, be generally aroused by the *unnatural brightness* and tense character of the skin that ensues a few hours from the time the injury was first inflicted.

"As regards dyed feathers, it is the wisest course not to publish the various conclusive means of proof available to the arbitrator. In feathers that are dyed whilst naturally remaining in the fowl, a dulness and want of iridescence, when viewed in a side light, usually attracts attention; but I must confess I have seen many cases in which the feather has been plucked out, 'cleaned up' by a dyer, and then reinstated, where the quickest eye, in the best of lights, failed to discover the deception, the natural lustre being perfectly restored."

SCHEDULE FOR JUDGING HAMBURGHS.

GENERAL CHARACTERISTICS OF COCK.—*Head and Neck*—General appearance of head neat, lively, and smart, rather short than otherwise ; beak rather short and small ; comb double or rose, wide and square in front, and tapering into a long spike pointing backwards and slightly upwards behind, to be flat on top, and full of "work" or points, and set firmly and upright on the head ; deaf-ear flat, and as nearly circular as possible ; wattles thin, neat, and rounded ; neck rather long, much arched or curved, carried well back, and full of long sweeping hackles, flowing well over shoulders. *Body*—General appearance neat and symmetrical, not tapering to the tail as in the Game fowl ; the back a fair moderate length, but appearing rather short from the hackle flowing over it ; saddle broad, and amply furnished ; wings large, but neatly carried ; breast full, round, and carried well forward. *Legs and Feet*—Thighs slender, short, and neat ; shanks rather short, thin, and clean ; toes very slender, and nicely spread. *Tail*—Very ample, with long and broad sickle-feathers, and plenty of secondary sickles or furnishing-feathers ; the sickles much curved and carried high, but not squirrel-fashion or over the back. *Size*—Small, averaging in Spangles about five pounds, but larger development no disadvantage if gained without sacrifice of points. *General Shape*—Light and graceful. *Carriage*—Lively, jaunty, and graceful, but not strutting, as in the Spanish cock.

[NOTE.—The shape of the Pencilled varieties is somewhat more light and slender, with less width of body, and the weight less, than the Spangled and Black.]

GENERAL CHARACTERISTICS OF HEN.—The general characteristics of the cock apply to the hen, with only the usual sexual differences. The same note as to the difference of shape in the Pencilled varieties also applies in her case.

COLOUR OF SILVER-SPANGLED HAMBURGHS.—*In both Sexes*—Beak a dark horn-colour. Comb, face, and wattles, brilliant red. Deaf-ears pure white. Eyes dark hazel. Legs dark leaden blue. *Colour of Cock*—Hackle silvery white, free from yellow, spotted at the bottom as much as possible. Back, shoulder-coverts, and wing-bow white, spotted with black, the spots being long and narrow, owing to the pointed shape of the tips of the feathers. Wing-coverts, each feather white, with a heavy round black spangle at the tip, forming two even bars across the wing. Secondaries white, spangled at the tips, the spangles forming what is called the "stepping" of the wing. Primaries also to be spangled on the ends. Saddle-feathers white, spotted on the ends with black. Breast, under parts, and thighs, white spangled with black, every feather having a rich, round, black spangle at the tip, the larger the better, and so arranged as just barely to show the white between. Tail white on the outside, greyish on the inside, each feather spangled at the tip ; the sickles and secondary sickles clear white, with a large distinct spangle at the end of each. *Colour of Hen*—Hackle silvery white, each feather spotted with black on the end, the spots towards the bottom becoming larger and rounder. Back, shoulders, saddle, tail-coverts, breast, under parts, and thighs white, each feather tipped with a large, round, black moon or spangle, not arranged so close as to overlap and appear solid black, but so that the white can just be seen between. Tail-feathers white, with a spangle at the end, which is however seldom perfectly round. Wing-coverts tipped with very large spangles, so as to form two regular bars across the wing ; and secondary quills to be white, tipped with a heavy crescentic spangle, so arranged as to appear like "steps" on the end of the wing when it is closed. Primaries also white, tipped with black. The marking to be as uniform all over body as possible ; and the hens in a pen must match, not only in this, but in combs and other characteristics.

COLOUR OF GOLDEN-SPANGLED HAMBURGHS.—*In both Sexes*—Beak horn-colour. Comb, face, and wattles brilliant red. Deaf-ears pure white. Eyes red. Legs dark leaden-blue. *Colour of Cock*—Ground-colour rich reddish-golden bay, marked as follows :—Hackle and saddle striped with black, the stripes to be sharp and clear. Back, shoulder-coverts, and wing-bow spotted with black at the tips of the feathers. Wing-coverts heavily spangled with large round spangles, forming two bars across the wing. Secondaries and primaries also spangled on the ends. Breast, under parts, and thighs, heavily spangled with rich round spangles. Tail rich green-black. *Colour of Hen*—A rich reddish-golden bay ground-colour, but in other respects similar to the Silver-spangled, except that the hackle is striped instead of spotted with black, and the tail is black. Except in these respects, in fact, the similarity extends to both sexes.

COLOUR OF SILVER-PENCILLED HAMBURGHS.—*In both Sexes*—Beak horn-colour. Comb, face, and wattles bright scarlet-red. Deaf-ears pure white. Eyes bright red. Legs dark leaden blue. *Colour of Cock*—Hackle pure silvery white. Back, saddle, shoulder-coverts, and wing-bow pure silvery white. Wing-coverts pure white on lower web, and heavily-pencilled across upper web, the pencilling to extend just at tip across outer web also, so as to form an indistinct or rudimentary bar. Secondaries white on lower web, except a strip of black next the quills, and black on inner web except a little grey or white on extreme edge ; primaries white on outer web and black on inner web. Breast, under parts, and thighs white, except a few black spots behind the thighs. Tail black in the true feathers ; sickles and secondaries rich glossy green-black, with a narrow lacing or edging of pure white all round. *Colour of Hen*—Hackle silvery white. Remainder of plumage, except wing-quills, a pure silvery white ground-colour, each feather pencilled across with black ; the pencilling to be as fine or frequent as possible, to go as straight and squarely across as possible, and to be nearly as possible equal in width to the white spaces left between. The secondary quills should also be pencilled, but this has rarely or never been yet attained ; and white on the outer webs, with a little undefined marking, is the rule. The tail-feathers should be, and often are, perfectly pencilled. The pencilling to "fall in line," as if continuous lines had been drawn round the bird, as far as possible.

COLOUR OF GOLDEN-PENCILLED HAMBURGHS.—*In both Sexes*—Plumage precisely resembles that of the preceding variety, substituting in the cock a ground-colour of reddish-golden bay, and in the hen a rich gold-colour or orange-gold; the black marking being similar.

COLOUR OF BLACK HAMBURGHS.—*In both Sexes*—Beak black or dark horn-colour. Comb, face, and wattles deep rich red. Deaf-ears brilliant white. Eyes bright red. Legs a deep leaden blue, approaching black. Plumage a deep rich black, brilliantly glossed with metallic green, or sometimes bluish purple—the more gloss, and the greener, the better.

VALUE OF DEFECTS IN JUDGING.

1. SPANGLED HAMBURGHS.

Standard of Perfection.	
A bird ideally perfect in shape, carriage, colour, markings, &c., and in perfect health and condition, to count in points	100

Defects to be Deducted.	
Bad head and comb	15
Bad carriage of tail	8
Stained deaf-ear	10
Deficiency in bars	12
,, ,, marking of tail (of Silver-spangled)	8
Spangling too thick, so as to appear black	8
,, too thin and small, so as to appear spotted	14
,, irregular, or want of clearness in ground, or any other faults of colour and marking	10
Want of general symmetry	15
,, ,, condition	15

DISQUALIFICATIONS.—Single or lopping combs. Hen-feathered cocks. Actually red deaf-ears. Absence of bars on wings. Legs any colour but blue or dark leaden-blue. Wry-tails, or any bodily deformity. Trimmed combs, or any other fraudulent dyeing, dressing, or trimming.

2. PENCILLED HAMBURGHS.

Standard of Perfection.	
A bird ideally perfect in shape, carriage, colour, markings, &c., and in perfect health and condition, to count in points	100

Defects to be Deducted.	
Bad head and comb	15
Stained deaf-ear	10
Tail not properly marked	12
Hackle marked or spotted	9
Other faults of colour (chiefly of pencilling in hen)	14
Want of general symmetry	15
,, ,, condition	15

DISQUALIFICATIONS.—Single or lopping combs. Hen-feathered cocks. Red deaf-ears. Rusty patch on cock's wing in Silvers, or feathers tipped with white in Gold. Legs any colour but blue or leaden-blue. Wry-tails, or any other deformity. Trimmed combs, or any other fraudulent dyeing, dressing, or trimming.

3. BLACK HAMBURGHS.

Standard of Perfection.	
A bird ideally perfect in shape, carriage, colour, &c., and in perfect health and condition, to count in points	100

Defects to be Deducted.	
Bad head and comb	15
Stained deaf-ear	12
Too long ditto	6
White face (signs of)	8
Want of "colour" or gloss	12
Too long legs and thighs	8
Squirrel-tail	10
Want of general symmetry	15
,, ,, condition	18

DISQUALIFICATIONS.—Single or lopping combs. Red deaf-ears. Red feathers. Legs any colour but blue or dark leaden-blue. Decided white face. Wry-tails, or any other deformity. Trimmed combs, or any other fraudulent dyeing, dressing, or trimming.

M. [illegible]

SILVER SPANGLED POLISH

[illegible] AT [illegible] AT PALACE [illegible] DUBLIN [illegible]

CHAPTER XXV.

POLISH FOWLS.

WE believe every writer on poultry, without exception, agrees in the opinion that the name given to the varieties of fowls which are grouped under the general title of Poland or Polish has no possible connection with Poland, and that the birds in question are not specially known there more than in other localities, though crested fowls are extensively spread over all the continent of Europe and Southern Asia. Dr. Horner's suggestion, that the name probably had reference rather to the peculiar *poll* or crest of these birds, is most probably the correct solution of the problem. We have what is known as a "polled" breed of cattle at the present day; and Dr. Horner's view of the matter has at least so far found acceptance that the name of Polands—once very common for these fowls—is now nearly abolished, and Birmingham and most other shows have adopted that of Polish as preferable. If the name of Polled fowls could be substituted, it would perhaps be better still, and the change would involve no practical difficulty whatever, as in the case of Hamburghs; but as no real inconvenience arises from the present designation, there is no occasion to press even so trifling a change upon reluctant fanciers.

The most conspicuous characteristic of Polish fowls is of course the crest, but there are also craniological differences which, though not so evident to mere cursory examination, are still more remarkable and distinct—such, in fact, as would many years ago have been considered sufficient to mark distinct species. That they were not so regarded was evidently owing to the uncertainty which then prevailed among comparative anatomists as to the *constant* character of these craniological features; Blumenbach affirming* that "very small indications" of them are found in the cocks, and even those slight indications very seldom; and Pallas inclining to the idea that they were produced by a cross with the Guinea fowl; whilst even Professor Owen's Osteological Catalogue of the Museum of the Royal College of Surgeons (Vol. I., p. 272) describes a Polish skull (No. 1,414) in the collection as "the skull of a variety of the Common Fowl (*Gallus domesticus*), having a spherical bony cyst above the orbits. Whether this peculiarity of the skull should properly constitute a variety is uncertain, being apparently the result of disease alone; the latter opinion is supported by the authority of Pallas." The question is thus here left open as to the nature of the peculiarities referred to, and their true character seems to have been first pointed out by the "Poultry Book" published in 1853 by Messrs. Wingfield and Johnson, where the facts are stated (pp. 165-6), on the authority of the late Dr. Horner, one of the most scientific fanciers who ever lived, in clear and accurate terms. "The chickens of this family," it is there said, "are no sooner hatched than peculiarities may be noticed by which they may be at once distinguished from those of any other fowls, viz., the elevated roof of the nostrils, the round and prominent appearance of the head, and, in the bearded varieties, the peculiar thick-looking neck . . . Much misconception has existed as to the nature and structure of this round appearance on the

* "De Anomalis," &c. Gottingen, 1813.

head of the Poland chicken previous to the growth of the feathers of the top-knot. It has sometimes been supposed to consist of a thickened state of the skin, or of a fibrous structure beneath it, as also of a fatty substance, forming a nidus or cushion from which the future top-knot grows. Dissection, however, demonstrates its true nature, and proves that the head of the Poland is altogether of unique conformation. The globular appearance is thus shown to be the result of the elevated form of the skull-cap itself, laying like a round marble on the top of the head. . . According to the extent and development of this globular prominence of the skull may the size of the future top-knot be accurately foretold; hence, in the best specimens it is large, and seems to include the whole upper part of the head; in inferior breeds with small top-knots it is but indistinctly developed. This test," says Dr. Horner, "is so accurate, that whenever it is considered desirable to rear only the finest birds, all those which are found wanting in this respect may be safely discarded; it is, in fact, the very shibboleth of Polands."

Fig. 87 is carefully drawn from the skull in the museum already alluded to, and shows the peculiarities plainly. Had their constant character been formerly known, and anatomists not been

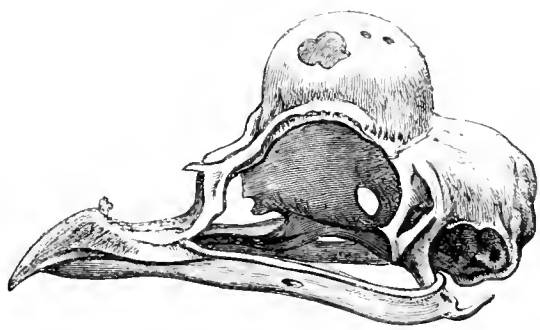


Fig. 87.—SKULL OF A POLISH FOWL, SHOWING BONY CYST ABOVE THE ORBITS, AND CHASM IN THE BONES SUPPORTING THE NOSTRILS.

led off the scent by the comparative uncertainty which we have seen to prevail, and which none but fanciers could be expected to dispel, we entertain very little doubt that in days when specific differences were less understood than they are now, the Polish would have been elected to the rank of a distinct species; but at the present day there would be considered no ground for such a conclusion, as not only does the Polish fowl breed indiscriminately with other varieties, the progeny being perfectly fertile, but the peculiar formation of the skull, and with it the crest itself, with which it is vitally connected, can be "bred out" by crossing with the greatest facility. Such facts furnish a striking example of the essential difference between apparently trifling, yet real, specific distinctions, and other distinctive marks of seemingly far greater magnitude and moment, but which experience shows to be merely characteristic of varieties. So regarded, they furnish arguments of the strongest nature against the Darwinian theory of development, so far as that theory applies to the origin of real species; though if attention be confined to the mere amount of *external change* effected, their tendency may appear the other way. No naturalist would consider mere crest as a specific distinction, since it has been developed in many families of birds, amongst others on the canary, which do not usually possess it. A small amount of crest does not appear to involve necessarily any change in the skull; but by selecting and breeding from birds with the largest crests, and thus developing that feature till it obtains the magnitude seen in the Polish fowl, we undesignedly influence the cranium also, till it assumes the character of the skull figured above. Striking peculiarities will be observed in two points. First, there is a

most singular protuberance towards the front of the top of the head, from which protuberance the crest grows; and, secondly, by virtue of the law that excess of growth in one part is frequently accompanied by defect in some other part, there is a chasm in the intermaxillary bones, which in ordinary fowls extend over and support the roof of the nostrils, but in Polish leave the superior edges entirely unsupported. Owing to this deficiency in bony structure, the nostrils of a Polish fowl appear flattened, depressed, and yet cavernous in character, as shown in Fig. 88. These differences are marked enough, and the advocates of development would appear at first sight to have a strong point in their favour; but the teaching of experience demolishes any theory which may be built upon them by the simple fact that both distinctions are of the most transitory kind, or the introduction of a single cross and careful breeding afterwards, speedily eradicating the whole, and the crest with them, as if they had never been.

Fig. 88.—Head of a Common Polish Fowl, showing the Cavernous Nostrils.

The varieties of Polish known to fanciers are rather numerous, but only three are generally seen at shows; the White-crested Black, which has wattles but no beard, and the Gold and Silver-Spangled varieties, which are now shown without wattles, the vacancy being supplied with a full beard or muff under the throat. This latter point used to occasion some debate in poultry circles; but the bearded birds have long since carried the day, and can alone be shown with success in England, being in almost every case also superior in size of crest. In America beardless Spangled Polish are still occasionally shown, all varieties of this fowl being somewhat scarce; but as breeders procure more stock and attain a higher standard, there can be no doubt that the much finer appearance of the bearded birds will there also give them the preference over those destitute of this appendage.

Mr. Beldon has kindly furnished the following notes on Spangled Polish fowls:—

"There used to be varieties without beards both of Golden and Silver Polish. These had long been known in England, but were deficient in size of crest, which was much smaller than in the

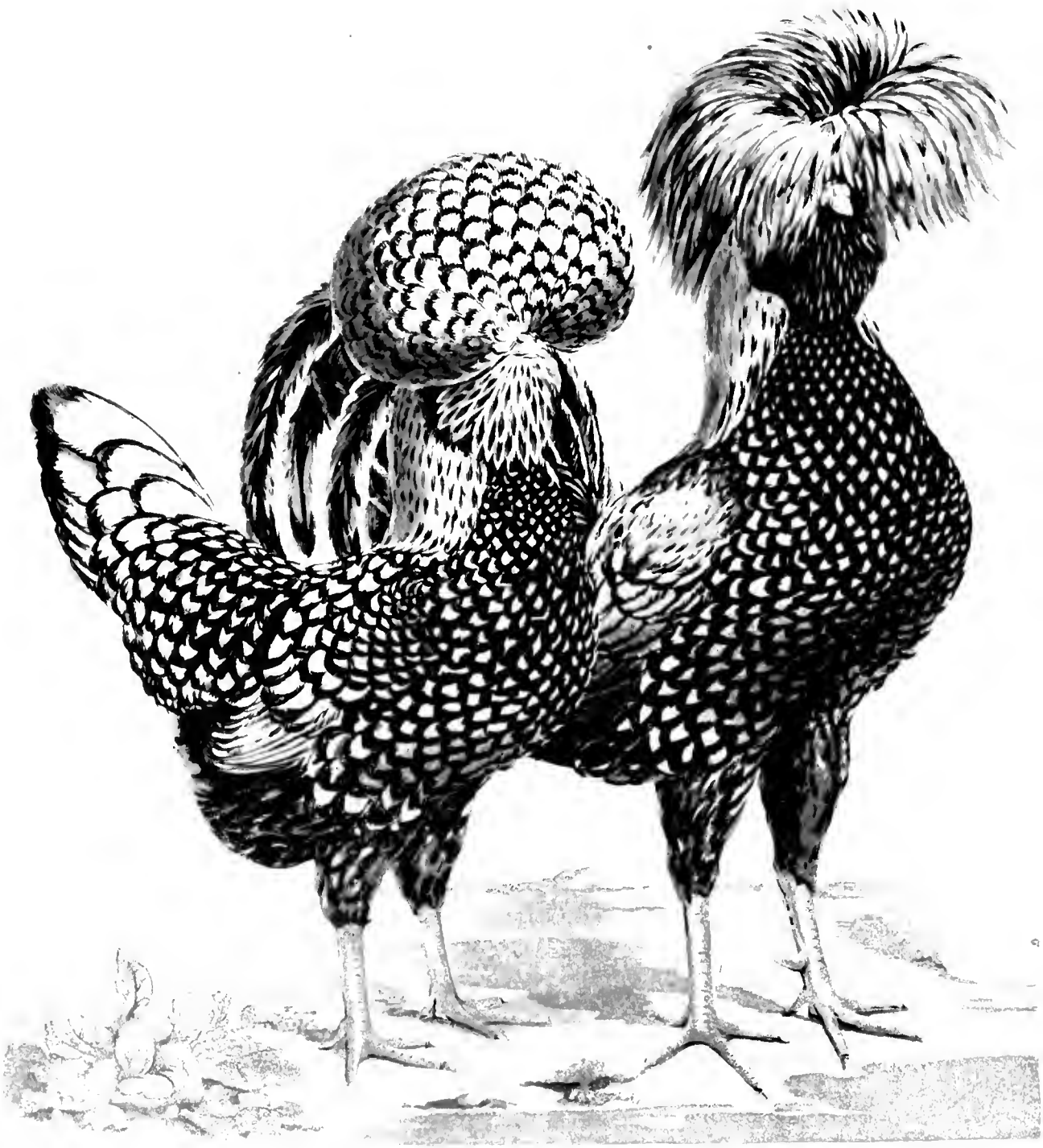
breeds we now possess. The bearded birds, I believe, were first imported by the great dealers, Messrs. Baily and Baker—I fancy from France, but cannot say.* The White-crested Black breed never possessed the beard, and has also been long known in England, but no one knows whence any of them originally came. The Polands are, however, beyond question of very ancient origin; for in many of the pictures by the old masters—and especially those by Dutch and Flemish painters—the fowls depicted in their rural scenes are birds which, though not bred to feather as we breed them now, are unquestionably Polish fowls in all essential respects. This testimony, undesigned as it is, I regard as of great value respecting the antiquity of the breed.

"All the varieties of Polish are remarkably handsome, and at poultry-shows they seem marked favourites with the ladies. They are especially adapted for a gentleman's residence, as they bear confinement well, provided only their place is clean, and that they are provided with a *dry* covered-in run; for they must be kept from the wet. With these stipulations, I think no poultry do so well and look so well in confinement. Of course, if there is not a small grass-run they must be supplied with green food. Their water should be given in fountains of such a shape that the birds cannot get their crests into it; Polish being apt to get the crest very wet, in which case it becomes draggled over the eyes, they pick the feathers out of the middle of each other's top-knot, and, of course, get completely spoilt. The use of the covered-in run is to prevent this, and the birds should always be driven into it when it rains. By observing carefully this one and simple precaution, Polish can always be kept so as to look handsome.

"When moulting, great care should be taken that the birds do not peck each other's crests, which they are very apt to do when in quill. The cock is especially liable to this treatment, appearing rather to like it than otherwise; at least he will stand still for the hens to pick all the quills out. The safest and best plan, if it can be done, is to put him in a separate pen *alone* until his crest is grown.

"SILVER-SPANGLED POLISH.—The Silver-spangled cock is in size somewhat larger than a Silver-spangled Hamburgh, but, as already observed, very similar in shape. The neck should be very curved and well thrown back, somewhat like a fan-tailed pigeon's; the tail also being carried very erect, but by no means squirrel-fashion or over the back. The crest, which is the chief fancy point in all Polish fowls, is composed of long thin feathers (the longer the better), and should be as full as possible. Its shape is a very great point, it should rise well up in the front, and fall down towards the sides and back, with no division in the middle, but all regular. The crests of many birds fall over the front of the face, which is a great drawback, as these birds when drinking get their crests in the water, and look most wretched. The larger the crest is the better, provided it is of a good shape, but shape is most important. The colour of the cock's crest should be black

* Just as these pages go to press we we have received the following interesting particulars from Mr. John Baily concerning the early Polish fowls, about which no one can speak with such authority. "I was, I believe," he says, "the first importer of fowls on a large scale from Holland; all our early importations were from that country. The Polands were for some years confined to the Black and Blue with white top-knots. After a time we also received some Golden and Silver-spangled; all the early importations were destitute of beard, and had small combs in front of the top-knots, and ample gills. Then came one or two pens of bearded birds (I speak of nearly thirty years ago), and they were much admired. Poultry-shows were in their infancy, and it was a case of Montague and Capulet, Guelph and Ghibelline, which should have the supremacy. The unbearded made a good fight, but the hirsute increased in numbers and influence. The originals made stout resistance, and tried at least for separate classes, but they lost ground, and gave up the contest. Still the bearded had combs and gills, but the fiat went forth, and these were voted disqualifications; they have remained so to this day. The first Poland fowls I imported were in 1835. I believe the first bearded birds were imported some years later by Mr. Baker. The first great breeder of them in this country was Mr. Graham Vivian, M.P., of Swansea, and one of the best pens ever shown belonged to Mrs. Brunel."



at the bottom of the feathers, white in the middle, and tipped with black at the end; but as they get older the crest becomes whiter, till it is nearly all white.

"The beard should be full and ample, and very dark; the neck-hackle also very full, and every feather from the head downwards tipped with black; but the hackle also generally gets lighter after the first moult. The breast should be well and evenly spangled with half-mooned or crescentic spangles, the back, wing-bow, and saddle-hackles well spotted with black; the wing-coverts heavily laced, so as to form two laced bars across the wing, and the secondary quill-feathers also well laced. The tail-feathers may be either white or grey, with a good moon at the ends of the sickle and side-feathers; these side-feathers being also well laced with black. I say the tail grey (besides the black marking upon it), finding from all my experience that these darker-tailed birds always breed better marked chickens, the white-tailed often producing birds too light in the lacing; I believe that on this account our best judges also like the dark-tailed birds the best. The legs should be slaty-blue. The beak is horn-colour. The colour of the ear-lobes is of no consequence, as they cannot be seen, but they are generally white.

"The crest of the hen should be full and globular; the larger, of course, the better, provided it is of good shape. It should be round as a ball, with no split or parting whatever in the middle. The colour of the crest when the pullet has got her first year's feathers is usually black at the base and up the middle of the feathers, edged with white, the width of the edging varying; but after the first year this rule is precisely reversed, the bottom and centre of the feathers becoming white, with a *black* edge or lacing—that is, such feathers as are black—but after the first year many feathers become wholly white, and the crest, as a rule, becomes lighter as the bird gets older. The beard should be full and ample, well mottled with black and white; the neck-hackle white, well striped, or rather laced, with black; back, wings, and other parts, every feather a sort of half-moon spangle at end, well laced up the sides (*i.e.*, a lacing all round, but much thicker at tip of feather), and bars heavily and regularly laced, as in the cock. The tail is white, well marked at the end, and laced up the sides. The breast runs more towards a heavy crescentic spangling.

"The laced marking thus described is now the recognised style of marking. We used to have a really spangled breed, or rather it would be more correct to call it semi-spangled; but these birds now find no favour, the laced marking being considered the only correct thing. It certainly is far superior in beauty.

"GOLDEN-SPANGLED POLISH.—In this variety the marking is the same in every respect as that just described, except in the ground-colour. In the cock this should be of a bright red on the crest, hackle, back, saddle, and wings; while the breast, under parts, and tail are a reddish brown; but the black markings are exactly the same as in the Silvers. The ground-colour of the hen is a golden brown; I would describe it as midway between the colour of a Golden-spangled and Golden-pencilled Hamburgh—not quite so red as the one nor so yellow as the other. The marking is, however, the chief thing; and if this be heavy and deep any rich golden ground-colour will do. This black marking, like the cock's, precisely resembles that of the Silver-spangled.

"The breeding of the two varieties is also similar. In putting the birds together, those with the largest and best crests should be chosen; this being the chief point, and any deficiency here being surely transmitted. However good a bird may be in lacing, if short of crest it is no use for exhibition; crest, therefore, *must* be secured to produce high-class specimens. Birds should also be chosen without any sign of comb, as this undesirable point is rather apt to appear when not wished. Formerly most Polish fowls showed a small two-horned comb, but by degrees the

obnoxious part has been pretty nearly banished, and care should be taken to keep it so. I also like them with good full beards; and find as a very general rule that if birds with good full crests and beards are bred from, the progeny are the same.

"Regarding feather, the more darkly-marked birds should be chosen for the stock-pen, as there is always a tendency to breed a little lighter, and if lightly-marked ones are bred from, the progeny is generally too light to be of any good. The style of marking should be that described above, and should be very heavy and deep in character, but sharp and cleanly cut. It is not at all necessary to breed from two sets, as good birds of both sexes can be bred from one pen; in fact, I would say again, that I look upon the plan of breeding from two sets—one for cockerels and another for pullets—to be altogether wrong in any breed. Care must, of course, be taken to choose birds free from any deformities, such as crooked beaks, or round or crooked backs, &c. Polands are particularly liable to these blemishes, and readily perpetuate them, probably from weakness of constitution or in-breeding. Fine, healthy, moderately perfect birds on both sides will almost always breed well. I prefer to breed a young cock with hens in this as all other varieties.

"April is a good month to hatch Polands, as they have then all the fine weather before them. At that time, if on dry soil, they are as easy to rear as most chickens, with proper care. They are no use hatched late, as they never then grow their proper exhibition feathers. I may observe that the difference in the feathering of a healthy strong chicken and a weak one is something wonderful. It is, therefore, necessary to keep the chickens in vigorous health throughout to obtain the full development of the crest, for a badly-kept chicken of the very best blood will never grow a good crest. In fact, they will often keep on their chicken-crest for a great length of time after their other plumage has been changed, so that it is most essential to keep them well up to the mark from hatching, and above all things to keep them dry, as above stated.

"The chicks look very pretty when hatched, and so far as the size of the crest goes, their quality can at once be pretty accurately known, for the size of the little projecting fluffy poll differs very much, as the crests will do in the full-grown birds; that is, if the crest is properly grown and not stunted, as mentioned above. The beard also is well developed, or otherwise. In the Golden the colour when hatched is a smudgy black-and-brown mixture; in the Silvers a smudgy grey; and the darkest chicks generally make the best-laced fowls. In the first feather the marking is very indistinct and patchy, and it is only in the second feathering that the quality of the plumage can be ascertained; the marking then becomes distinct, and the crest also shows a lacing of black and white or black and brown, as the case may be.

"All Polish are pretty good layers, and as a rule do not sit."

Figs. 89, 90, representing feathers of Silver-spangled Polish, and which are carefully drawn from specimens supplied from Mr. Beldon, will serve all necessary purposes for both varieties. The accuracy of marking in really fine specimens is extraordinary, and far superior in effect to the old-fashioned spangling. That a really spangled breed—that is, a breed spangled rather than laced—did at one time exist, is certain, but diligent search for many years has not rewarded us by bringing to light a single specimen. Even the old descriptions quoted in various works state that these spangled birds were laced on the wings; and hence it appears highly probable that the superior beauty of this marking led to its being increasingly cultivated by fanciers, until the spots or spangles had entirely disappeared, except at the ends of the sickles. None but laced Polish are ever shown at the present day, and only the moons at the ends of the cock's sickles now remain to show the original type of the variety. The spangling in these old Polands was never perfectly round like that of the Lancashire Mooneys, but more resembled the crescentic character of the marking in the Yorkshire Pheasant fowls.

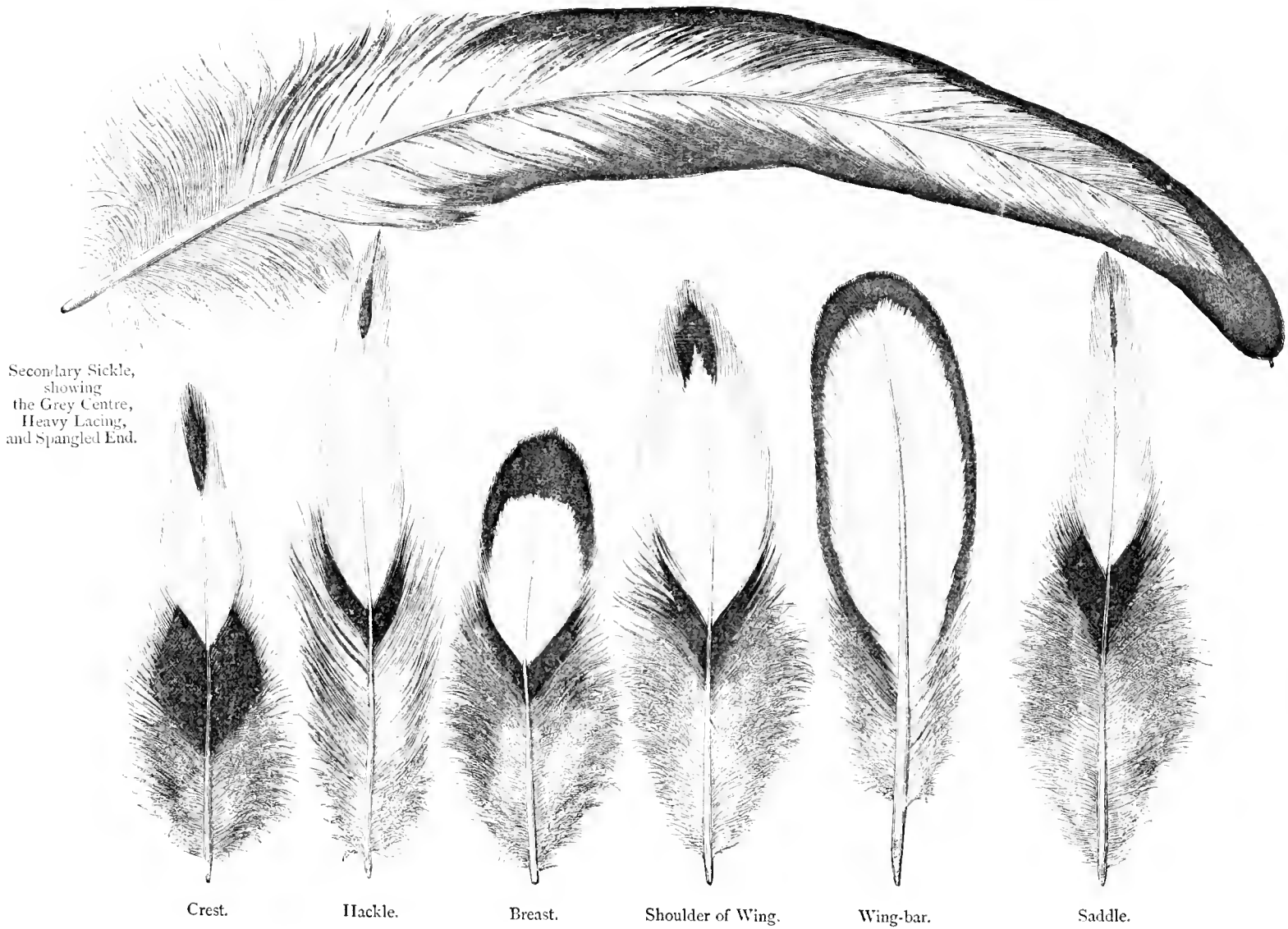


Fig. 89.—FEATHERS OF SILVER-SPANGLED POLISH COCK.

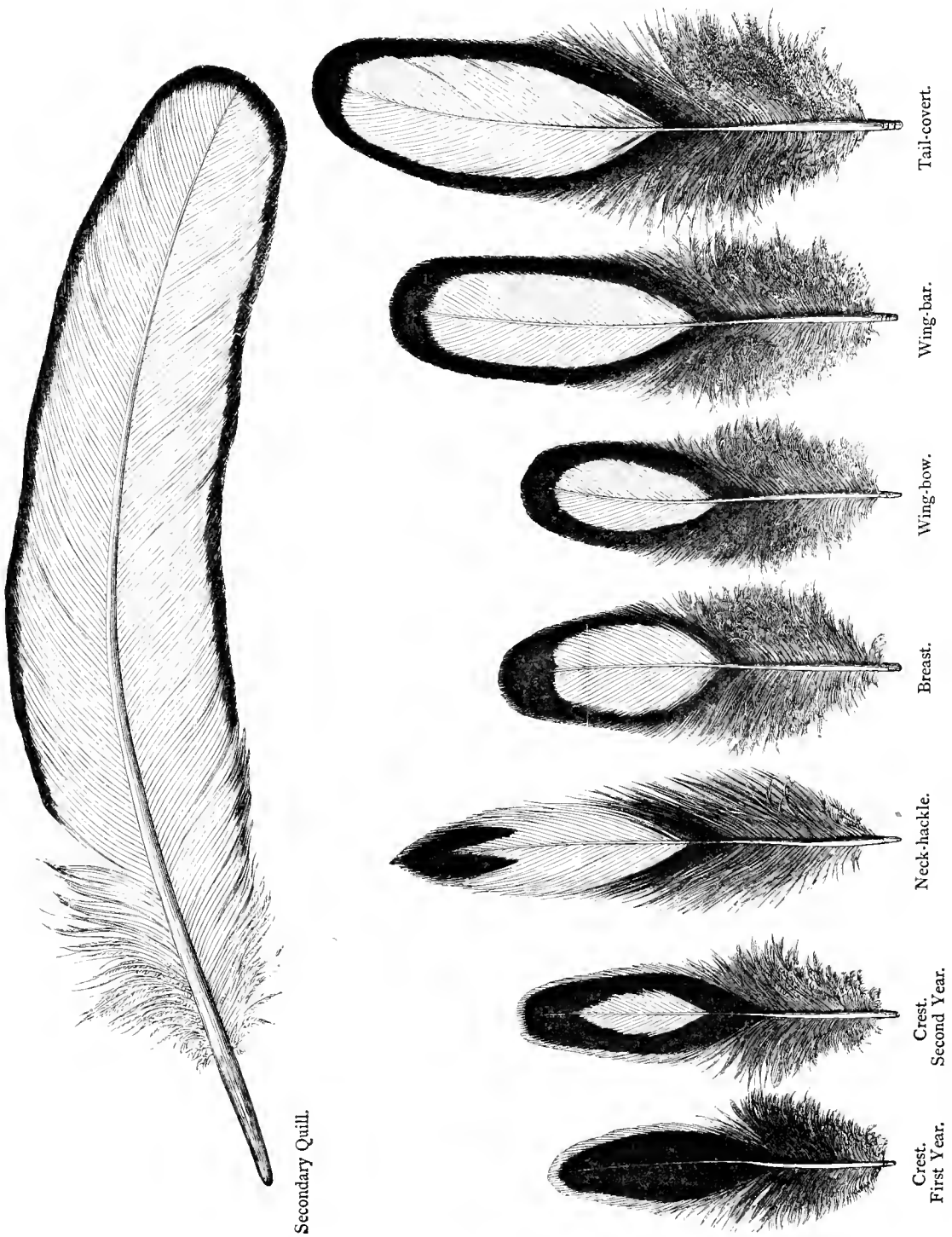


Fig. 90.—Feathers of Silver-spangled Polish Hen.

WHITE-CRESTED BLACK POLISH.—This is one of the prettiest varieties of poultry we know, the contrast in colour between the crest and rest of the plumage being at once so striking and harmonious, the shape so compact and neat, and the disposition so naturally tame and confiding, as indeed is that of the whole Polish family. Mr. Hewitt was formerly one of the most successful breeders and exhibitors of this variety, and has kindly furnished the following notes upon its qualities, breeding, and management:—

"Among the great variety of breeds of domesticated poultry, none perhaps are so universally admired as the Black Polands. The striking contrast of the white crest, and, in highly-bred specimens, the beautiful iridescent character of the general plumage, never fails to attract the attention and to elicit the admiration of even such individuals as do not make poultry-culture a matter of either amusement or profit. These fowls certainly were one of my most favourite breeds for a number of years, and few persons who have given them a fair trial report of them otherwise than most favourably. It must, however, be constantly borne in mind, that to be fully successful Black Polands must enjoy a very dry run, for if kept on a wet cold subsoil, where the rain lies long on the surface, they soon become unhealthy, and are perhaps more difficult to cure when disease has once overtaken them than any other breed of fowls with which I am acquainted. A gravelly, sandy, or chalky soil therefore suits them admirably. Though not large, they are a good-flavoured plump fowl on the table; and as to the production of eggs, few, if any, excel them. That hens of this description vary greatly as to their productiveness I at once admit; but no doubt this irregularity might be readily equalised, if eggs from the best-laying hens were selected for the production of future brood-stock, rather than the plan, now all but universal, of hatching the eggs of the largest-crested hens, altogether irrespective of their laying properties. The greatest number of eggs I myself ever knew laid by a single fowl in one season occurred in a hen of this breed; when, however, they lay so uninterruptedly they are prone to become so weakened (being non-sitters, and having consequently no rest) that consumption ensues, which in such a case rarely admits of remedy. I may add, the eggs are of a very palatable quality.

"As one of the most important traits characteristic of this unique variety is a fully-developed globular crest, without any irregularity, perhaps it may be well to name what long experience proved to me, viz., that a cock possessing this feature, even if mated to a hen with a comparatively poor crest, produces chickens with better top-knots than can be obtained where the hen is all that could be desired, but the brood-cock comparatively inferior in crest. Of course where both parents are ample in crest a favourable result is still more certainly ensured, as this kind of fowls usually breed with great regularity when the parent birds are well chosen; but the selection of the cock is decidedly the most important feature.

"In no other breed of fowls is trimming more universally practised than in Black Polands; in fact, in the largest entries, it is a rarity to find even a single pen in which the crests have not been assiduously prepared for exhibition. A foolish notion exists in the minds of some amateurs that the crests of Black Polands should be *wholly* white; certain it is no instance ever yet occurred of its being naturally so, though to the superficial visitor at some of our poultry-shows they appear plentiful as blackberries, trimming more or less having been resorted to by the exhibitors, incurring in many cases immediate disqualification (or their pens being simply passed over), when if such deception had not been attempted prize-taking would as certainly have resulted. It is a matter worthy of remark that, although in case of the violent removal of any portion of the *body*-feathers which are black (particularly so if at the time immature), the renewed plumage will frequently be white; on the contrary, strange as it may seem, however often the black feathers that may be in the *crests* are plucked out, even if taken designedly at half-growth again and again, such crest-

feathers are invariably reproduced as perfectly black as they were originally. At best it is a cruel practice; the improved appearance is of course only temporary; and as not unfrequently the space laid bare round the crests by the removal of these feathers proves, on careful inspection in the hands of the judge, as wide as the finger, a fearful rack of constitution must ensue to the fowls themselves, quite irrespective of the blighted hopes as to prize-taking of the fraudulent owner by whom they were exhibited. Another species of deception has also become of frequent occurrence, viz., entirely 'dubbing' off the combs of Polish cocks whilst cockerels. A practical judge can however soon determine, on close examination, where this deception has been resorted to; and, I may add, in really well-bred chickens no such practice is required.

"As is the case in Spanish fowls, in fact all dark-legged breeds of poultry, the Black Polands become lighter-coloured in the legs and feet as years creep on. They are then not so taking to the eye of an arbitrator; but I consider it myself one of those *inevitable* results of old age that should not be allowed to militate against them when competing with younger specimens.

"For the guidance of those who may adopt Black Polands as their future favourites, it will not be out of place to throw out a few suggestions that may prevent annoyance and loss to the inexperienced. The chickens are apt to dwindle from perfectly robust health, drooping the wings, and dropping off, at from five to six weeks old. This is their trying time, and once safely got through it, they then become as hardy as most descriptions of fancy poultry. A little extra care as this time draws nigh—with the addition of chopped cheese, crushed hemp-seed, and maggots from stale flesh, *well scoured* for a few days in bran to cleanse them from impurities—I always found brought them safely through their difficulties. Another circumstance worth naming arises from the naturally timid character of young Polands, when the crests are fully developed and they have not been accustomed to be handled. If taken up unexpectedly from behind, I have to my chagrin known several cases of them dying instantly, although most tenderly handled; the head suddenly dropped, a slight gurgling in the throat took place, and the most valued specimens became 'worthless altogether.' This evidently arises from sudden alarm, as they cannot see coming danger from the rear when the crests are as fully developed as I have seen them; and the accident generally takes place when the chickens have hitherto been subjected to no restraint on a wild country walk. If spoken soothingly to *before* taking them in hand, this mishap is altogether obviated.

"Among full-crested cocks annoyances frequently arise from the hens eating away the centre-feathers of the crest while yet immature. This evil practice once acquired is difficult to repress, the fact being, the cocks stand perfectly still and allow the young feathers to be eaten away piecemeal, as though not susceptible of pain even when the blood is flowing freely. The only course appears to be rather by prevention than remedy—viz., to fasten the cocks up separately for a few days during the time the crest-feathers are being reproduced, for when matured even the same hens rarely continue this vexatious habit. Sometimes when cocks have been thus repeatedly plucked by their companions, I have known the crest-feathers reproduced *beneath the scalp* (being unable to force a passage); this unnatural growth is frequently attended by severe local inflammation, and even death. I had, some years back, two or three cocks thus suffering experimented upon by a medical acquaintance, the result being that though he 'saved their lives,' they were in every case totally ruined as show-birds.

"I will very briefly narrate a circumstance connected with the best hen I ever had (or ever saw) of this variety, and which is no less singular than instructive. She came into my possession most unexpectedly, being sent among a large quantity of other poultry from Shropshire to a Birmingham poultry-dealer. I obtained her for little more than 'killing-price.' One of the toes of this hen was deficient of about half its length, on the left foot. Every appearance betokened

that it had resulted from some accident or other, and as you could see and feel the apparently crushed bone at the end of the half toe, it was supposed she must have had it trodden off, or, perchance, it might have been caught some time in a rat-trap. When breeding, that very season, I soon became aware that a number of the best of the chickens were wanting in the corresponding toe to the before-named old hen; and, to establish conviction, or to prove the fallacy of my (then) suspicions, I carefully selected for separate nests the eggs I knew were laid by the fowl I had so opportunely saved from being made away with. The result was, the chickens, so far as the eggs were prolific, were all minus the half-toe the same as the mother-hen, from which cause this hen's chickens were readily selected. My sole motive in mentioning so strange a freak of Nature is to prove how strongly hereditary this evidently unusual malformation proved itself in the offspring, and as a warning to others not to breed from stock that possess any malformation whatever, as sooner or later its reproduction may be fairly anticipated.

"I confess myself, however, a total disbeliever in the ludicrous attempts that have been made by some poultry amateurs to coerce Nature, as it were, by putting her in their leading-strings—such as dyeing the wings of the old cock to make the chicks follow in the wake of the 'made-up' parent, or the still more laughable attempt once made by an amateur long since gathered to his fathers, and which constituted a never-ending theme of merriment at the time. This would-be pioneer of improvements longed for, and stated his conviction that 'he *could breed*,' White Polands with black crests, a breed long since extinct, but naturally, in these poultry-loving days, most covetable. He procured some eggs of the White Polands, a variety well-crested and heavily bearded, but *entirely* white throughout the *whole* plumage. The chickens, as soon as the sexes were at all discoverable, were carefully set apart, the pullets being sent away to a lone walk far from the intrusions of any other poultry whatever. It so happened this adventurer imprudently confided the secret plan of his operations to a friend, more noted for his satirical joking than the expression of kindliness to the object of his mirth. It appears that after keeping these pullets for months thus entirely secluded, as they commenced laying he one morning, in the presence of his confidant, produced from a basket a White Polish cock, own brother to the pullets in question, but with his crest and beard most artistically 'dyed' pure black. When turned down, the hens naturally viewed their new-fashioned looking companion much as they would have done any other stranger that intruded on their hitherto unbroken seclusion. Enough transpired, however, to excite to ecstasy the hopes of our amateur. Hens that were broody were purchased at high prices; every egg was tested in this 'speculation;' very many chickens were the result; but I need scarcely say there was not a single one among them which, to use a nurse's phrase, was 'the very picture of his father.' Such must be the sequel of all similar appliances to overrule the natural order of things. Accidental 'sports' of colour or formation may with care be perpetuated in coming generations; but I should as soon anticipate that Game cockerels could be grown without comb or wattles, because their progenitors had been denuded of them for centuries past, as that purely artificial colouring or clipping of the feathers would affect the colour or shape of future broods."*

* We have in previous portions of this work shown grounds for believing that *some* effect is very frequently produced by imagination or mental impression upon hens during the breeding season. But all such facts tend to show that these effects are very variable and only occasional, depending much on individual character and other circumstances which do not admit of being calculated; and we should never dream of more than guarding against any possible *evil* results from this cause, or of attempting to attain any definite and positive results from it. Even did we believe in the operation of the principle to the same extent as Mr. Hewitt's amateur, we should say that his experiment lacked many elements of success, most obvious details being left unattended to.

The White-crested Black Polish is pronounced by almost all who have kept it to be an *extremely* delicate variety, very subject to cold and roup, and constitutionally weak in other respects; but Mr. Peter Unsworth, one of the most successful exhibitors of the present day, gives the breed a different character altogether, writing to us of his fowls as follows:—

"They are, I find, extremely hardy, and prolific layers of medium-sized eggs. It is an error to suppose they cannot be successfully kept on damp or clayey soil, as my place is both damp and a heavy clay soil, surrounded by what are called flood-meadows or marshes, which are covered with water for almost six months of the year; yet I find no difficulty in breeding and rearing them, or keeping them in health, under these circumstances. The cock should be about six pounds in weight when in good condition, with a noble upright carriage, and the hen five pounds. The crests should have as few black feathers as possible, and those only in front over the beak. In breeding for exhibition, the chief thing is to put together birds with the largest crests you can get."

We are bound to say that this opinion as to the hardiness of Black Polish is not borne out by the experience of any other fancier we are acquainted with.

Besides the three leading varieties now described, various other breeds of Polish are occasionally seen at shows, nearly all of which are handsome fowls, and worthy of more extensive cultivation.

The most commonly met with is the *Buff* or *Chamois Polish*. In this variety the ground-colour is buff, or, rather, light gold, somewhat like the Golden-spangled breed, but the spangling is white, instead of black. The effect is rather pretty, though a little sickly-looking. In most of the specimens we have observed, the white marking is hardly so much laced in character as in the Golden-spangled birds, partaking more of a spangled character. The white should be as sharp, clear, and regularly put on as possible, and the ground-colour as even and rich as can be obtained, a pale buff being very inferior in effect. There is little doubt that this breed was originated by a cross between the Golden-spangled and the White; at least this cross often produces the colour exactly, converting the black marking into white without much changing the ground-colour, precisely as the cross between Black-red and White Game produces a Pile. The variety can therefore be easily bred and shown by any one who may possess good White specimens; and, in spite of its delicate appearance, is very hardy.

White Polish are generally very large and fine birds—perhaps the largest of all existing Polish varieties. They are not so often met with now as formerly. It is thought they sprang originally from the Silver-spangled. The White-crested Black birds occasionally throw pure white chickens, but these, of course, are small, and have no beards, like the parents; while the true White Polish is large and fully bearded.

There was formerly a breed of *Black-crested White Polish*, but it has not been seen now for many years, which is the more to be regretted, as from all accounts it appears to have been the largest and hardiest variety of all. The last seen specimen of the genuine race appears to have been a hen found by Mr. B. P. Brent, at St. Omer, in 1854, which he describes as dwarfing even Malays (which were large fowls in those days) in the same yard, but inquiries he made leave some hope that even yet the breed may perhaps be recovered from the Continent. These, too, were bearded fowls. The mere colour might easily be obtained by perseverance, as has been proved by every one who has attempted it; choosing for the purpose such White Polish fowls as show (which many do) even a very slight tendency to black in the crest; according to the principle long since discovered by both breeders of animals and cultivators of floral varieties, that the *first* step towards any desired variation, and the most difficult, is to get the parent or normal stock to vary at all. By this means Mr. Vivian succeeded in approaching the desired colours, and a similar measure of

success rewarded experiments made in the same direction by Mr. Tegetmeier; but it is to be regretted that in neither case was the attempt persevered with. In Mr. Tegetmeier's case we are informed the chief difficulty to be mastered was the fact, that though chickens were produced nearly or quite white in the body, at their next moult they became speckled all over. This difficulty, however, might probably have been overcome with a little patience and care.

Black Polish are very rarely seen, and are probably related to the White, though which must be regarded as the parent stock is somewhat doubtful. These birds are generally, however, very small, which makes the origin we have supposed somewhat uncertain.

Cuckoo Polish we have seen twice, but the colour does not look handsome or showy in this variety. As we have previously observed, there is no difficulty whatever in breeding this colour.

Blue or *Grey Polish* resemble Andalusians in colour. They rarely breed true, and in our opinion occur from crossing White-crested Black with White, as their chickens are often either one of these colours or cuckoo in marking, as well as blue. In fact, the relation of both the Blue colour and the Cuckoo to White or Black at some period more or less remote, is one of the best ascertained facts in all poultry-breeding. The Blue Polish have also frequently white top-knots, which makes the parentage we have suggested still more probable.

There was a variety of Polish—now we fear extinct—resembling in plumage the Silver-pencilled Hamburgh, but very robust in form, and with heavy crests and beards. The effect must have been very beautiful, and it would be worth while attempting to resuscitate this marking, which might possibly be done by crossing a heavily-marked Pencilled cock with a White Polish hen.

Some other varieties of Polish have been seen on the Continent, but their fixity of character is very uncertain. It must, however, be granted that any marking which occurs in fowls is *possible* also in Polish, and the extensive prevalence of the crested type of bird all over the Continent makes it very likely that there are yet other varieties there which might be added to our yards. It is much to be wished that some of our great dealers would make diligent and *systematic* search in this direction, which might perhaps yet be rewarded by the recovery of the coveted Black-crested White breed.

There are other recognised breeds which are distinctly of the Polish type. The Crêvecœur is really nothing but a large Black Poland with a larger comb; and the other French races are all beyond a doubt crossed with the same family, even the La Flèche having originally had a small crest. These breeds will, however, be best treated of in another chapter; and Sultans, which also have affinities with the present race, have some other characteristics so distinct that we shall refer for them to the chapter on miscellaneous varieties. The Crêve, however, is evidently a Polish fowl almost pure, and we have often been astonished that Polish breeders have not used it both to improve the size and deepen the lacing of the older races. Perhaps the most promising commencement towards recovering the grand size as well as colour of the old Black-crested White breed, might be a cross of the Black Crêve cock mated with White Polish hens; and a judicious cross of the Crêve with the other varieties would speedily yield results of a very striking character, both as regards size and marking.

The general qualities of Polish will have been already gathered. The bearded varieties appear fairly hardy; and though individuals differ greatly, on the whole all the varieties must be pronounced excellent layers. The meat is most excellent; being peculiarly juicy and tender. Polish have another great merit, they are perhaps of all breeds the best adapted to thrive and be happy in *strict* confinement—that is, if the sole run be a wired-in and covered shed. Provided such a shed be kept very dry in the floor and very clean, Polish will thrive and look well in it; of course, supposing the necessities of diet be attended to. Lime rubbish mixed with sand or gravel makes an excellent bottom for them; and if kindly treated they become almost immediately as tame as cats. We

have repeatedly observed, when our schoolboy resources compelled the confinement of our ambition to the rearing of mongrel chickens, that the *crested* birds were almost always the tamest of the lot, often flying for yards in the air to perch on our young shoulders, or jumping up on the wrist or into the lap to be caressed. Polish, in fact, seem "made to be petted," and we can most thoroughly recommend them as lady's fowls, provided only they be kept dry and clean.

To cross Polish is to lose in a great degree their most distinguishing characteristics. The French breeds, however, prove the advantages which may be derived from the juicy flesh and fine laying qualities of the race; and if beauty be not an object, we can state that a cross with the Dorking produces a fowl which is most delicious eating, while also a good layer and hardy.

The strains of Polish being limited in numbers, and the constitution rather weak—the excess of structure, as in the Dorking toe, having also probably something to do with it—Polish are *peculiarly* subject to such malformations as wry-tails or curvature in the spine. A bird should never be purchased therefore, or bred from, without being most carefully felt in the hands, as well as inspected; and if one hip-bone be felt under such examination to be in the least higher than the other, the fowl should be rejected. Faulty bills are also rather common in the chickens. By a little care in the selection of breeding-stock, however, and good healthy bringing-up of the chickens, these malformations may to a great extent be avoided.

There is one point to be attended to in rearing Polish chickens. As their feathers grow, fowls clean and preen them with the bill, thus removing the horny sheath at the proper time, and allowing the feather to expand. The crest, however, cannot be thus reached; and in many really fine and healthy birds the feathers would never burst the sheaths in proper time if left unaided. Hence, it is necessary at the right period to remove the sheath with the thumb-nail, when the feather in a few hours expands to its full beauty. It is this tendency to remain *too long* in quill which causes the propensity to eating the quills both our able contributors have alluded to.

JUDGING POLISH.—Polish fowls are not very often trimmed except in the crests and combs, which last are often amputated if too conspicuous. This fraud can generally be detected, and as it is unnecessary in well-bred birds, should of course be visited with the most stringent penalties.

In all the varieties, *fulness* of crest is as important as the size, and a moderate-sized, but full and symmetrical top-knot should have the preference over one which is larger, but hollow and straggling. In the Spangled breeds regularity and richness in the lacing are, of course, very great points; but in all the varieties a general "neatness" of form and make-up are to be taken into consideration. The judge should also have a very careful eye to those malformations, which in this family are so common.

SCHEDULE FOR JUDGING POLISH.

GENERAL CHARACTERISTICS OF COCK.—*Head and Neck*—General appearance of head lively, but somewhat foppish. Beak moderate and well-proportioned; comb imperceptible or nearly so; wattles absent in the Bearded or Spangled varieties; long, thin, and pendent in the others; deaf-ears small and round; crest round, large, and as full as possible, the feathers being very similar to those in the hackle of each sex respectively; beard (in the bearded varieties) also as full and large as possible; neck moderate in length, carried very upright, and arched in a pretentious manner, and full of hackle. *Body*—General appearance light and neat; rather wide at shoulders and narrow at saddle; wings well-proportioned and neatly carried; breast round, full, and carried very forward. *Legs and Feet*—Thighs short, shanks rather short, perfectly clean, and slender; toes medium length and thin. *Tail*—Very ample, both in size and furnishing, carried nearly but not quite upright, and on no account squirrel-fashion or over the back. *Size.*—Rather small, averaging about six pounds. *General Shape*—Rather slight, but compact and neat. *Carriage*—Very strutting and vain.

GENERAL CHARACTERISTICS OF HEN.—*Crest*—In her case very compact and well filled up, giving a kind of "solid" appearance. *Tail*—Carried rather fanned or spread, so as to show the spangling well. In other respects same as in the cock, with the usual sexual differences. *Size*—Rather small, averaging four pounds and a half. *General Shape*—Very neat and pretty. *Carriage*—Very coquettish, and as if inquisitive.

Colour of Silver-spangled Polish.—*In both Sexes*—Eyes bright red ; beak dark horn-colour ; face red ; legs slaty-blue. *Colour of Cock*—Crest-feathers black at roots, white in middle, and spotted with black at tips (mingled with white feathers in old birds); hackle white, spotted with black at tips ; back, shoulder-coverts, and wing-bow, white spotted with black, similar to but broader than hackle and saddle-feathers ; wing-coverts white, laced all round with black, the lacing broader or thicker at the ends of feathers, forming two symmetrically laced bars across the wings ; secondary quills finely laced all round, the lacing broader at tips, with this exception, the outer web is white, the inner web white with more or less grey or greyish-black mingled, but still clearly lighter than the black lacing ; primaries very similar to secondaries ; saddle-feathers white tipped with black, and glossy black at their bases ; breast white, with a heavy crescentic spangle at tips of feathers, often running up the sides so as to form a lacing (the marking must be distinct, and not so heavy as to appear black) ; tail white or grey, spangled with black at tips of feathers ; sickles the same ; tail-coverts or side-feathers, white with more or less grey in centre, heavily laced with very resplendent green black. *Colour of Hen*—Crest black, finely laced with white the first year, afterwards white laced with black ; hackle white, laced at tips with black ; breast white, spangled with crescentic spangles, running up almost into a lacing ; remainder of plumage white, laced entirely round every feather with black, even in the secondary quills ; the lacing being rather thicker or heavier at tips of the feathers.

Colour of Golden-spangled Polish.—In all respects similar in both sexes to the preceding as regards marking, only substituting the golden for the silver ground-colour.

Colour of White-crested Black Polish.—*In both Sexes*—Beak black, or dark horn-colour. Face and wattles red. Deaf-ears white. Eyes red. Crest pure white, with a few black feathers in the front (the fewer the better). Rest of plumage a deep rich black. Legs a very dark slate colour, approaching black.

Colour of Chamois or Buff Polish.—Ground-colour a rich buff or yellow, spangled with white. The white spangling generally approaches a more truly spangled rather than the laced character of the Gold-spangled breed.

The colours of other varieties, such as White-crested Whites, Black-crested Blacks, Blue or Grey Polish (resembling Andalusians in colour), and Cuckoo Polish, are sufficiently described by their names. They are rarely shown, and we cannot therefore construct any tables for them. As a rule, they are bearded ; but not being exhibited often enough to be brought within a rigid type, this point is not in their case imperative, and they should be judged as they are—on their general merits.

VALUE OF DEFECTS IN JUDGING.

1. Spangled Polish.

Points of Merit.	
A bird ideally perfect in shape, style, colour, crest, muffling, and condition, to count in points	100

Defects to be Deducted.	
Want of size in crest	9
,, fullness in ditto	12
Presence of more than merest rudiments of comb	10
Dark breast	8
Wings badly laced	10
Tail ,, ,,	6
Other faults of colour or marking	10
Want of size	10
,, ,, symmetry	18
,, ,, condition	15

2. White-crested Black Polish.

Points of Merit.	
A bird ideally perfect in shape, style, colour, crest, and condition, to count in points	100

Defects to be Deducted.	
Want of size in crest	8
,, ,, fullness in ditto	14
Too much comb	10
Red deaf-ear	4
Too much black in crest	8
Bad white in ditto	6
Want of gloss or richness of plumage	8
Want of size	8
,, ,, symmetry	15
,, ,, condition	15

Disqualifications.—Distinct two-horned comb. Crooked backs, wry-tails, or any other deformity. Presence of foul-coloured feathers in any part. Amputated combs, plucked crests, or any other fraudulent treatment. Legs of any colour but blue, or black, or bluish-black ; which may, however, be lighter in tint from age.

CHAPTER XXVI.

FRENCH BREEDS OF POULTRY.

THE enormous production of eggs and poultry in France, to which allusion has already been made, and the fact that the breeds most esteemed by the French were very distinct from those varieties which were formerly known to poultry-keepers, might naturally lead at first to the conclusion that to the breeds in question was the great production due. This idea seems to have been in fact entertained by the managers of the National Poultry Company mentioned in the earlier portion of this work, who devoted much time, money, and energy to the dissemination in this country of the French breeds of poultry, which, though already known, were previously to the Company's existence very little kept. To a great extent these exertions succeeded; but subsequent experience of the French breeds has not shown any such general or conclusive good qualities in them as can account for the immense poultry crops of France, which appear rather, as we have already said in the proper place, to be owing to the immense number of *small proprietors*, who for many reasons—especially with a fine climate in their favour—are in the most favourable position for poultry-keeping of any individuals in the world. All expectation that "French fowls" would give French success has long since vanished; but, nevertheless, some of the French races have been found to possess truly valuable qualities, and one of them in particular—the Houdan—has formed a most useful addition to our poultry-yards, and is becoming every year deservedly better known.

The French breeds have all one point in common—every one of them is most delicious *eating*. They, moreover, show in a very suggestive manner what may be done by a judicious system of crossing, and subsequent selection, in the way of founding new breeds; since they are evidently built upon the Polish fowl as a foundation, obtaining from this race the juicy flesh, excellent laying properties, and absence of incubating instinct, whilst size has been added from foreign sources. The Crêvecœur, as we remarked in our last chapter, is in fact a Polish fowl to all intents and purposes, but increased in size; and the same ancestry is shown by the delicate constitution which characterises nearly all of the varieties. This fault, which is of little consequence in a climate like that of France, becomes of serious importance in less favoured localities, and will probably interfere with the extensive popularity of any French variety save the Houdan; though the Crêve appears to have manifested of late symptoms of more satisfactory acclimatisation than at one time appeared probable. Without further remark on these points, however, we will proceed to consider the breeds themselves in detail.

HOUDANS.—This breed was vaguely described by Messrs. Wingfield and Johnson in 1853, but the first authentic description of it in English was published in 1865 by Mr. Geyelin, in the pamphlet embodying those views on wholesale poultry-keeping which, as we have before seen, so signally failed. As it is always interesting to compare the earlier impressions of recently-introduced varieties with the conclusions of more recent experience, we quote his description entire. Of Houdans he writes:—

"Whatever has been said to the contrary, this breed, when pure, is most characteristic; but it must be admitted that most of the farmers near Houdan know as little of the pure Houdan breed as those of La Flèche and Crêvecœur know of theirs; and, if you were to order some first-class birds of them, irrespective of price, they would with good conscience forward fowls of a large size—but, from a want of knowledge, some cross breeds. To illustrate this, I may mention that I could have purchased, at the markets in those respective localities, splendid thorough-bred specimens for about three shillings, the price of common fowls, but which were worth, even in France, one pound each. There are, however, in each locality some persons who take an interest in their pure breeds, particularly since they have been encouraged by the reward of prizes from poultry exhibitions.

"The Houdan fowl has a very bulky appearance, its plumage invariably black and white spangled, a crest of the same colour; comb triple, the outsides opening like two leaves of a book, and the centre having the appearance of an ill-shaped long strawberry. With the cock the comb is very large, whilst with the hen it ought to be scarcely perceptible. The legs are strong and of a lead colour, with five claws, the two hind ones one above the other. Strongly-developed whiskers and beards both in cocks and hens. This is one of the finest races of fowls, but its qualities surpass even its beauty. Besides the smallness of their bones and the fineness of their flesh, they are of an extraordinary precocity and fecundity; they lay large and white eggs, and the chickens are fit for the table at four months old. It is, however, observed that they are very indifferent for hatching. The weight of adults is from seven to eight pounds, in which the bones figure for one-eighth. The chicken when four months old weighs, without the intestines, about four pounds and a half."

Further experience of Houdans has proved them to be extraordinarily hardy, and when the stock has been selected and bred with judgment, excellent layers; while they fully keep up the character for precocity and fine quality on the table which Mr. Geyelin gives them. We never reared any ourselves but once some years ago, when we hatched a sitting of eggs sent by rail. We found these chicks hardier even than our Brahmas, and they appeared to feather as if by magic; but, being from a small and recently-imported strain, did not make much weight by the time they were killed. English breeders have, however, somewhat increased the size of the fowl, without as yet apparently injuring its other valuable qualities, and also made some approach to more uniformity of colour. We are, however, glad to see that there has been no attempt as yet to "breed to feather;" all that has been done being the attainment of a tolerably uniform dark speckled or splashed plumage of black and white, free from colour, which is far from unpleasing, though not entailing the consequences which a too rigid standard always involves. Of the modern or English Houdan, as thus improved simply by careful breeding, Mr. R. B. Wood, of Uttoxeter, has been one of the most successful cultivators; and to his kindness we are indebted for the following notes on the variety:—

"I have now kept Houdans for nearly seven years, and can safely say that I have not found them fall off in any way, but quite the contrary. I find them good layers of fine eggs, and as table fowls not, in my opinion, to be surpassed. They are very hardy as chickens, feathering and maturing in a much shorter time than either Brahmas or Cochins. I consider them a very valuable breed for any one to keep when non-sitters are required, as it is very rare for them to show the least tendency to incubate. It is also worth remark that though good foragers when at liberty, they are easily kept in bounds, being very different to Hamburghs or Game in this respect; and they will bear confinement as well as most breeds.

"My idea of a good Houdan cock is as follows:—He should be as large as possible, and carry himself well. The comb should be good and characteristic; not of the Crêvecœur type, but flat

at the sides, with something like a bunch of coral in the centre: it is, however, very difficult, if not impossible at present, to breed to any *exact* standard in this particular point. The wattles should be long; the crest large, composed of feathers similar to those of the hackle, and inclining rather backwards so as not to hide the comb; the muffling full, so as to hide the face. The colour should be a rich black and white, as evenly marked as possible, especially on the breast; but most birds have more or less straw-coloured feathers in crest, hackle, and saddle, and I do not consider them any great drawback, although I would prefer pure black and white if the bird were equal in other points. The tail should be dark in colour, well sickled, and carried erect. The legs are light in colour, or black and white [we should describe the colour ourselves as pinky white, mottled with black], with fifth toe well developed.

"The hen should be large, with a *small* coral-like comb; crest and muffling large, and as full as possible; colour pure black and white, as evenly broken as can be, the markings being rather small. The legs are similar to those of the cock. Red feathers are inadmissible in both sexes.

"The cock whose portrait appears weighed, when in fair condition, nine pounds and a half and the hen six pounds and a half. The heaviest hen I ever possessed weighed as much as eight pounds and a half; but I have some doubt if she was pure-bred, though I purchased her of a well-known breeder.

"To breed Houdans, if the hens are light in colour, a dark cock or cockerel should be selected; but I prefer to mate dark hens with a cock or cockerel rather lighter, and from birds so mated I have bred beautiful birds of both sexes. I am inclined to think crest comes from the hen, and would therefore be more particular in choosing large-crested hens than cocks.

"The little cockerels may soon be distinguished from the pullets by their combs, which are much more prominent, the pullets often showing scarcely any until they assume their adult plumage; the crests of the cockerels are also composed of differently-shaped feathers, being similar in kind to the hackles. In the pullets the crest should be fuller and more round in shape. If the chicks are bred from birds of a known good dark strain, I would caution breeders not to condemn them for being too light in colour, as if they are well bred they will in all probability get dark enough afterwards—at least I have found it so with my birds. Pullets and cockerels must be very dark to make good-coloured birds in after years, so that fine young birds, though too dark, if good in other points may be kept to show later in life, as well as to breed.

"They make excellent birds for the table at an early age, and for market are preferable to the Crêvecœurs, on account of the lighter colour of the legs. When early hatched the pullets make capital winter layers."

When first imported the fifth toe of the Houdan was very uncertain, and many birds brought from France were also deficient in muffs or beards. The requirements of English shows have led to fixture of both points, but in the case of the fifth toe, at least, we are far from sure the decision was a wise one. We ventured at the time to predict that sooner or later we should acquire with the positive fixture of this point the inevitable "bumble-foot" which so troubles Dorking breeders, and we were interested to observe isolated cases almost immediately afterwards. That was several years ago; and since then we have seen many. The breed is yet far from being as subject to the complaint as the Dorking, which is partly owing to its being naturally a lighter-made and more active fowl, and partly to the fact that the toe has not been "bred in" so long and so thoroughly, being evidently derived from the Dorking cross employed to fashion the breed; but it is decidedly on the increase, and we cannot but again express our regret at *unnatural* peculiarities being thus perpetuated in what profess to be table fowls.

It is worth remarking that Houdan cocks are in general the most vigorous of any, and should

have a proportionate number of mates. Hardly an egg will prove unprolific, and the chickens generally hatch some hours before their time. Scarcely any, perhaps, give so little trouble rearing. The breed bears confinement well, unless the fowls contract the vice of *feather-eating*, which all the French breeds are rather apt to do when penned up. We are much inclined to think this to be owing in part to the *crest*, which we have already seen in the case of Polish offers strong temptations at certain seasons, or even when wet.

As a farmer's fowl the Houdan can hardly be surpassed, provided Brahmas or some other breed can be kept separate for hatching; as the fecundity will rapidly fill the egg-basket, while the juicy flesh is not only all that can be wished, but the pinky and five-toed legs make the fowl very saleable. To keep up these valuable qualities, however, it will be necessary to pay attention, as we have already so many times remarked, to selecting eggs for sitting from fine vigorous birds which are good layers, as well as to the points desired by exhibitors. For want of such precautions, some strains of Houdans have already deteriorated; and as the Houdan can never be a first-class fowl *merely* from the fancier's point of view, to lose these practical advantages is really to lose all that makes the fowl worth having.

We have already hinted at various Houdan crosses. Those with Brahmas or Cochins make capital fowls both as layers and for the table, maturing remarkably early. Some breeders have crossed Houdans with Dorkings to gain size, and we feel pretty certain that a Crystal Palace prize bird we once saw was so bred. The size, however, is usually gained at the expense of prolificacy, and the birds thus produced have a heavy and coarse appearance, which is entirely foreign to the Houdan when pure.

Our portraits represent some of the finest and best birds we have seen; but we should have liked the cock better had he not been *quite* so dark.

CRÊVECŒURS.—This breed has been the longest known in England of all the French varieties, having been described by Messrs. Wingfield and Johnson twenty years ago. In conformation it is not so very different to the Houdan, but the comb consists of two horns rather than leaves, the crest and beard are fuller, and the whole make heavier; in fact, the general appearance somewhat resembles a combination of the Polish with the full development of the Cochin. The head of the Crêvecœur as bred in France is shown in Fig. 91; English breeders have bred the crest somewhat fuller and more compact, but the general aspect of the head and the comb remains the same.

The following notes on Crêvecœurs are by Mr. W. Blinkhorn, who was, till a year or two ago, a very successful breeder of this variety.

"Crêvecœurs have been described as black or black and white variegated. This variegation, sometimes white and sometimes golden, is most noticeable in the crest, and after that in the hackles and saddles, but I have never seen it in other parts of the birds. I scarcely remember a bird that did not show it more or less the second year, and as they grow older it increases. I have seen good combs of both varieties—two-horned and antlered—and think both are common to the breed; but the former are more general and I think preferable.

"They are decidedly late in beginning to lay; their eggs are large, but I have not found them by any means frequent layers. As to their sitting properties I should pronounce them to be decidedly non-sitters. I have had a large number through my hands, but had only one that showed the slightest inclination to sit.

"My experience with Crêvecœurs has been somewhat unsatisfactory. My poultry-ground is situated in the moist climate of south-west Lancashire, and it is on clay. It may therefore be particularly ill-suited for this breed of fowls, though Game fowl, Hamburghs, and Brahmas do well

on it. But it has throughout been my ill-fortune, out of many imported pens of a cock and two hens each, to lose one, generally a hen, within a week or two of their arrival, and the others have had a severe illness from the same sickness, apparently severe cold and roup. Once over this attack, imported birds have proved perfectly hardy in every way. I have generally found them to be larger-framed birds than I could produce here, but not showing nearly so much breeding in form, feather, crest, or comb as the birds produced from my original stock that had been carefully matched for years, with an occasional admixture of imported stock. I found, too, that imported birds were very much more liable to variegation of white and golden feathers than English-bred birds, and, as a rule, after their second season they were useless for exhibition purposes.

"The chickens reared here I have never found so precocious as has been stated. In this

Fig. 91.—HEAD OF CRÊVECŒUR COCK.

district they are especially difficult to rear, and suffer to an unusual extent from cold and roup, to which they fall easy victims. As compared with any of the hardy breeds, say Brahmas or Cochins, I should not expect to rear one Crêvecœur for three of the others. In all varieties of fowls a really fine specimen is a rarity, but a fairly good average quality is generally attainable; but in Crêvecœurs, from the most carefully selected parents, I have found a very large proportion of most inferior birds, bad in feather, form, crest, or comb, and that birds at all approaching a quality fit for exhibition have been especially difficult to obtain."

These notes were written in 1871, and at that period all the accounts we were able to obtain from other breeders were pretty much to the same effect. But we were much interested to observe even then that there were evident signs of "better days" to come for the poor Crêves, and that, although known and bred for many years without apparent improvement in constitution, there appeared some probability of their becoming, to a fair extent, "acclimatised" after all. We ventured to express a belief to this effect on various occasions, and were the more confirmed in it by hearing, on unimpeachable authority, that certain strains imported into the United States from France were found very fairly hardy, which would go far to prove that much depended on the

original stock. However this may be, the fowl *has* become decidedly more hardy and easier to rear of late years; and the fact is worthy of special record, as holding out some hopes of successful acclimatisation in similar or future cases, even after many years of apparent failure.

The following notes are by Mr. R. B. Wood, of Uttoxeter, one of the most successful of the present breeders, and will fully corroborate the facts we have stated, being, indeed, written in reply to a request for information on the present state of these very points, as mentioned in Mr. Blinkhorn's remarks of two years before.

"My experience of Crêvecœurs," he says, "does not altogether agree with Mr. Blinkhorn's as to the cock's throwing red or golden feathers with age. I have never been troubled in this way, but I do find a great tendency in both cocks and hens to throw out more or less white feathers in the crests after the first moult, and, though objectionable, I would not discard an otherwise good bird on this account. I fancy by care the fault may be bred out.

"In the cock I should look for good size, lustrous greenish-black colour, sprightly carriage, and good two-horned comb (if free from tynes so much the better), and also a good crest and muffling, although I am of opinion it is the hen we must chiefly look to for producing chickens good in these respects. Therefore, one of the first points I should look for in the hen would be a large globular crest, with a comb rather small for *pullet*-breeding, but the larger-combed birds are the best to breed *cockerels* from. I would also like the hen of a good greenish-black colour, not brownish, which looks bad.

"Crêvecœurs have, without doubt, wonderfully improved in hardiness during the last few years, so much so, that I now find them very nearly as hardy as Houdans. I may also say, as a breeder of both, that I find them easier to breed good than that variety, that is, if really good specimens be selected for the breeding-pens. As layers I consider them good; this spring (1873) I have found them produce *more* eggs, and those exceedingly fine ones too, than either my Houdans or Dark Brahmas. For the table they are excellent, and, like the Houdan, are ready for the spit at a very early age. They are of a very sociable disposition, and easily kept within bounds; although, if given their liberty, they are by no means bad foragers."

Other accounts we have received privately are not quite so favourable as the above; but all agree that, within the last few years, there has been a marked and apparently unaccountable change in the constitution of the birds, and also in its average laying. In the latter quality the Crêvecœur *sometimes* ranks very high, but in other cases we have known it far otherwise; the eggs are, however, always very fine and large; and on the whole, if the recent improvement in hardiness be maintained, this must be pronounced a valuable race of birds.

The Crêve is the bulkiest in appearance of all the French races; indeed, we have often thought that it must have had a cross with the Cochin, which is to some extent borne out by its enormous appetite. It is the favourite market-fowl of Normandy, and the flesh is both of good colour and most delicate flavour. No fowl could perhaps better show the absurdity of the prejudice against dark legs in poultry for the table, which still lingers in many quarters. It bears close confinement admirably if not allowed to get too fat; but, like the Houdan, is somewhat liable to feather-eating under these circumstances.

In breeding, it is very needful to secure purity of the black colour, with which, of course, are to be sought full-sized and solid-looking crests, and the fine frame and square development which always mark good specimens. Many of the finest birds first imported had golden hackles, but little difficulty should now be found in obtaining perfectly black specimens. The perfectly black crest is by no means secured yet, white appearing almost constantly in the second year. Nothing could plainer show the relationship with the White-crested Black Polish fowl; but the white is

still to be considered a fault, and bred out as far and as soon as possible. It is very desirable, for the sake of constitution, to breed only from mature birds.

Besides the Black breed, Blue Crêvecœurs are occasionally seen, but are of inferior beauty. Of late, however, some very handsome White specimens have been shown. These were originally produced as mere "sports" from the Black, but have been bred from with fair success, and there seems every probability of our speedily possessing a well-established and very beautiful White breed.

Crêvecœurs make capital crosses for the table with either Brahmas, Cochins, or Dorkings, and, we believe, also with the Malay. The pure-bred fowl is however so large, and matures so early, besides being so good a layer, that little beyond a greater degree of hardiness is gained by the experiment.

Every characteristic of Crêvecœurs is shown to the life in Mr. Ludlow's excellent portraits.

LA FLÈCHE.—This breed differs considerably from both the preceding. The latter are compact and neat in frame, while the La Flèche is high and rather gaunt-looking, the whole frame and the character of the plumage denoting, evidently, a preponderating portion of Spanish blood. That a Polish cross was also employed is, however, conclusively proved by the facts that nearly all the specimens first imported had a small crest, while the signs of the cross are still apparent in the small two-horned comb. English exhibition standards have required the total eradication of crest, and the La Flèche is now a very tall Spanish-looking fowl, with red face, brilliant white ear-lobe, and glossy green-back plumage. The fowl as now bred is scarcely so upright as the earlier specimens, but the bird is still taller than the Spanish, and often attains very great weight.

The flesh of this fowl is, in our opinion, more delicate and juicy than that of any other variety except the Game; yet, strange to say, though valued above all others in France for this quality, it would be despised by English dealers in dead poultry on account of the *black legs*, showing that others besides "fanciers" do harm by insisting too much upon "mere arbitrary standards." It is a moderate layer of very large white eggs, but by no means so good as the Spanish in this respect, and it is as a table-fowl its claims stand highest. It does not mature early—not nearly so early as the Houdan or the Crêve, and hence the fat chickens come on for the French markets when the others are nearly over, and fetch very high prices, being worth even in July, according to Mr. Geyelin, as much as five shillings each. With all these merits, the breed appears likely never to be either popular or profitable in England, being so exceedingly delicate as to counterbalance all valuable qualities. The Hon. C. W. Fitzwilliam, who has persevered longer with them than any one else, describes them as "laying well and early, the eggs being large, solid, and of good flavour," but adds that "the cockerels are very liable to weakness in the hocks," and that "dull and damp springs expose them to rheumatic affections." They are, in fact, *peculiarly* liable to suffer from any but the very best weather; and in addition to this defined source of danger, which can to some extent be guarded against, or the ailments treated when they arise, the cocks especially, and sometimes the hens also, are continually appearing as if suddenly attacked with fatal illness. It is difficult to say "what is the matter with them," only they look as if they were just going to die! The curious thing is that, after coddling up for a day or two by the fire, they will not unfrequently recover as suddenly as they became ill, and equally mysteriously; but, unfortunately, *sometimes they don't*, and this fact makes such seizures productive of feelings more interesting than pleasant to the proprietor. It is rather remarkable that Crêves too are a little liable to these sudden and strange attacks, but not nearly so much as the fowl in question, which may not uncommonly be found apparently well at mid-day, almost certainly (to all appearance) dying the

same night, and perhaps well again next morning—*perhaps dead.* The case of the Crêves just mentioned should keep us from rashly concluding that this singularly unsatisfactory constitution is incapable of improvement. It is possible that in this instance also time and care may acclimatise the fowl, and within the last twelve months we think more La Flèche have been shown than for some years before; but we must confess the last accounts we have been able to obtain are not encouraging, and we cannot recommend this breed as a profitable one, or to be kept under any circumstances, except under the favourable conditions of a warm aspect, and dry, gravelly, or chalky soil.

In breeding La Flèche, pure white ear-lobes, absence of crest, neat and small combs, and hard glossy plumage should be chosen, as regards the more "fancy" points; but it will be particularly needful also to select birds which present fine sturdy frames, and as strong a constitution as possible, choosing a cock, if it can be done, which was free from leg-weakness as a chicken, and

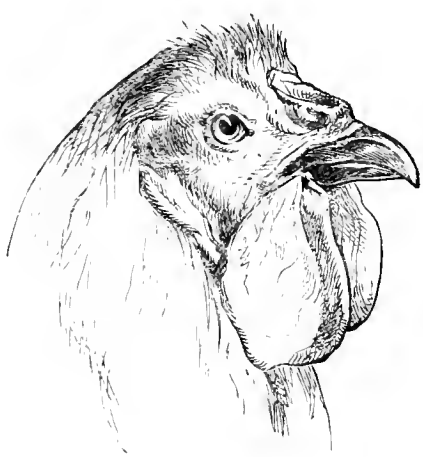


Fig. 92.—Head of Breda Cock.

especially only breeding from *fully-matured birds.* All means should be used to strengthen the constitution of the chicks by good nourishing food, especially supplying plenty of phosphates, for which nothing can equal the ground bones or bone-dust we have already recommended. We have also good reason to believe that the *regular* use in the water of the syrup of phosphates described by us at page 188 might have in this case very remarkable results, *all* the faults in constitution to which the breed is liable presenting marked symptoms of a deficiency of phosphatic elements in the blood.

The La Flèche is so seldom shown that we have had some difficulty in framing a standard from actual results. To a considerable extent, therefore, the table of points must be regarded as our personal views; but we have done our best, from the few pens shown, and a careful comparison of the scales in breeds somewhat analagous (which afford valuable aid in cases of this kind), to frame one such as shall afford the materials for a sound judgment.

BREDAS, OR GUELDRES.—This cannot be called a fancy breed in any sense of the word, but is a good useful fowl nevertheless; and the only reason it has not been popular in England is probably that it is inferior in size to the Houdan, which in general qualities it much resembles. It is a fairly good layer, though not quite so good as the Houdan perhaps, and very

hardy; rarely sits; has a round and prominent breast, and is consequently a good table fowl. As an exhibition variety it is inferior, and only occasionally takes prizes in the "Any Variety" class.

The breed is really one, but of various colours; the name Gueldres being applied to that of a cuckoo or Dominique marking, while another variety, all black, is termed Breda. White fowls are also, but rarely, seen, which are probably sports from the black, and are also called Bredas. The general shape is Polish, but the crest, though just perceptible, is only so, being nearly absent; what there is of it is the same colour as the body-feathers. The greatest peculiarity is however in the comb, which is absent altogether, only a depression in the red skin being visible, just over the cavernous nostrils, which thus become peculiarly conspicuous, and show, in spite of the deficient crest, the close relationship to the Polish family. Fig. 92, copied from M. Jacques' drawing in *Le Poulailler*, shows these points and the entire head of the Breda cock with great fidelity, and will spare the necessity for further description. The shanks are (rather scantily) feathered, the birds being, in addition, vulture-hocked.

In America this breed is more extensively kept and widely known than in England, and, we have some reason to think, may have entered into the composition of some of Brother Jonathan's new creations. We can thoroughly recommend it as a good and useful fowl, but have not seen a good specimen now for some years; in fact, not since the dissolution of the National Poultry Company, with whose last manager the Cuckoo or Gueldres variety was rather a favourite. We cannot in this case even attempt a Scale of Points, since there is not a sufficiently definite opinion as to the characteristics to which the fowl should be bred. We need only add, in addition to the remarks already made, and the cut of the head which we have given, that the legs, as in the other varieties, should be dark or slaty blue.

LA BRESSE.—These fowls also were imported largely by the National Poultry Company, and are very highly spoken of by M. Lavergne in the paper from which we have already quoted at page 93. They appear, however, to have no distinguishing characteristics whatever, but to be simply a fine, large, and delicate-fleshed race of barn-door or mongrel fowls formed by judicious breeding. Large and fine they certainly are,* but they vary in colour, combs, and many other points. At our last visit to the Company's establishment at Bromley, not very long before its final winding-up, Mr. Schröder pointed out to us with pride a fine pen of La Bresse fowls, of which we took special note on account of all we had heard. We have never but once since seen as good. The cock weighed just on ten pounds as he ran in the pen, but we do not remember the weight of the hen. The cock exactly resembled a single-combed, red-breasted Dorking, with four toes, and

* We are aware Mr. Tegetmeier affirms the La Bresse to be "*much smaller*" fowls than the preceding; and in a very hostile review of the first edition of "The Practical Poultry Keeper," in the *Field* (of the poultry department of which Mr. Tegetmeier publicly announces that he is editor), it was argued, as proof of our gross "ignorance of French fowls," that we had termed these birds large, whereas they were really "the smallest" of the French breeds. It may therefore be well to point out, in addition to the proof afforded by the birds mentioned above, that in both editions of Mr. Tegetmeier's own "Poultry Book" there is printed a table of the average weights of chickens of the various breeds, shown at the exhibition of dead poultry at Paris in 1864, to which we have before alluded. These weights, then, are given by Mr. Tegetmeier himself as follows:—

	La Bresse. lb. oz.	Houdan. lb. oz.	Crêvecœur. lb. oz.
Unprepared	6 12	5 4	4 11
Prepared for the cook	5 5½	4 3	3 14
Cooked	3 3¾	2 15¾	2 12½

Hence it appears that, on an average of five specimens each, the La Bresse were much the heaviest; and a reference to his own figures, which we had not seen when the "Practical Poultry Keeper" was written, might have otherwise directed the charge so recklessly brought against that work. From various specimens seen since, we adhere deliberately to our description of these fowls.

the hen was a grey-speckled bird, showing very plainly that some old importation of the Dorking fowl (which is well known in France) had had much to do with it, though, as already remarked, it appears nothing more than a fine and well-fed barn-yard race, improved by *any* promising cross as occasion offered. We have seen also black-breasted and speckled-breasted cocks; but though all the birds were much of the Dorking type—and the finest we remember (the cock weighing ten pounds and a half) was in almost all points a Dorking—we never saw one with the fifth toe.

No scale even of descriptive points can be given for the La Bresse fowls, further than to say that the larger they are and the nearer they come to the Dorking type, except the fifth toe, the better. We believe none have now been imported for a long while, and we confess we can see no reason for doing so, as they present no points to tempt the fancier, to whose energy is always due the chief importation of fowls; while many other breeds equal them in merely useful qualities.

Besides the breeds named above, many crosses or sub-races are known throughout various districts in France. Some of them—such as the Le Mans, which is evidently a Crêve with the crest much diminished—have attained to some uniformity of type, but all are evidently derived from one or the other of the preceding breeds, and as evidently partake of the strong Polish ancestry.

The whole opens up two general questions of some importance. The first is, the great merits of the Polish race in respect of egg-production and quality of flesh, and the perfect possibility of grafting these upon increased size and hardiness, or, as in the case of the Crêvecœur, of adding to the size while preserving the Polish blood nearly, if not quite, pure; the second is, the power of man, by judicious crosses, to create and fix new types of very different appearance and qualities from the same primeval ancestry. Little has been done in the way of crosses as yet by English fanciers; and the results already obtained by both French and American experimentalists in this field of enterprise are sufficient to cause some feeling of regret that the most scientific and skilful of all breeders have not yet set their hands to similar work, at least as regards the larger varieties. The creation of Game Bantams, and the marvellous truth of form and feather obtained in these beautiful breeds, would warrant the expectation of "something good" if scientific breeding of this description were systematically attempted with regard to the more useful races of fowls.

JUDGING FRENCH FOWLS.—In deciding the relative merits of these birds, it is never to be forgotten that they are chiefly to be regarded as *useful* races; hence good size, symmetry, and evident vigour of constitution, should always be allowed great weight in judging, and be always allowed to carry the day in doubtful cases. There are, perhaps, few classes in which the special gifts of "a quick eye for a good fowl," and "common sense," are so much required. In Houdans especially, considerable latitude as to shade must be allowed, though in Crêves, of course, being black fowls, any coloured feathers must always be discouraged. For the rest we must refer to our Schedules.

SCHEDULE FOR JUDGING FRENCH FOWLS.

General Characteristics of Houdan Cock.—*Head and Neck*—General appearance of head brisk and lively; beak medium-sized; comb large and branched, somewhat like two leaves of a book opened, with a bunch of coral in the middle; wattles rather long, but neatly rounded; deaf-ears rather small, and nearly hidden by the muffling; crest large and full, pointing rather backward, away from the comb; beard or muffling full and thick, both under throat and at sides; neck medium length, carried very upright, well arched, and full of hackle. *Body*—General appearance full and square, the back very wide and slightly drooping; saddle also wide; wings well developed, but carried closely and tightly; breast very broad, prominent, and full. *Legs and Feet*—Thighs and shanks short, the latter perfectly free from feathers, and moderately stout; toes well developed and straight, with a double or fifth toe behind, to be distinctly formed, and turned rather upwards, as in Dorkings. *Tail*—Ample, with broad

sweeping sickles, and carried rather upright. *Size*—Large, ranging in adults from eight to nine pounds. *General Shape*—Square and deep. *Carriage*—Upright and lively, somewhat between that of a Dorking and a Poland.

GENERAL CHARACTERISTICS OF HOUDAN HEN.—Resembling those of the cock, except that the comb and wattles are small, and the crest round and compact, owing to the difference of sex. Average weight six to seven pounds.

COLOUR OF HOUDANS.—*In both Sexes*—Beak horn-colour; comb and wattles brilliant red; eyes bright red (this is not imperative). Legs white, or pinky-white, mottled or spotted with lead-colour or black. Plumage black and white, as evenly mingled as possible all over the birds; straw-coloured feathers objectionable, but not a disqualification. In the cock the colour goes in larger masses, and his tail is generally chiefly black, which looks best.

GENERAL CHARACTERISTICS OF CRÈVECŒUR COCK.—*Head and Neck*—General appearance of head must be like that of the Polish, but more grand and stately; beak medium size; comb two-horned, and as free from tynes or small branchlets as possible, but of good size; wattles moderate and well-rounded; deaf-ears to be small and hidden by the muffling; muffling very full and thick, hiding both throat and cheeks; neck medium length, carried very upright, and full of sweeping hackles. *Body*—General appearance neat, but very massive, with much fulness of "build" and development, somewhat as in the Cochins; back being very wide and rather flat across, slightly drooping; wings closely tucked in; breast very deep, prominent, and full. *Legs and Feet*—Thighs short, shanks as short as possible, perfectly free from feathers, toes large and straight. *Tail*—Very large, with broad sweeping sickles, carried high. *Size*—Large, ranging in adults from seven to eight and a half pounds. *General Shape*—Wide and deep. *Carriage*—Lively, but noble and grand.

GENERAL CHARACTERISTICS OF HEN.—Similar to the cock, with the usual sexual differences. Her general appearance and carriage almost exactly like that of a Polish fowl, but somewhat more dignified.

COLOUR OF CRÈVECŒURS.—*In both Sexes*—Beak black, or very dark horn-colour; comb and wattles brilliant red; eyes red (not imperative, but red denotes the best constitution); legs dark slate or black; plumage a deep brilliant black all over, including crest, with as much gloss as possible. In White Crèves the plumage is, of course, as denoted by the name.

GENERAL CHARACTERISTICS OF LA FLÈCHE COCK.—*Head and Neck*—General appearance of head long, slightly coarse and cruel, but not very much so; beak large and strong, with cavernous Polish nostrils; comb a double spike, standing nearly upright, with very small spikes in front; head to be quite free from crest; wattles long and pendulous; deaf-ears large; neck long, and carried very upright, but not backward, with as much hackle as possible. *Body*—General appearance large, powerful, and rather hard, from the close plumage; back wide, rather long, and slanting to the tail; wings very powerful, and tightly carried; breast full and very prominent; plumage all over very close and hard. *Legs and Feet*—Thighs and shanks long and powerful, the latter being perfectly clean; toes large and straight. *Tail*—Moderate in size, and carried at a medium height, neither upright nor yet low; the sickles to be sound and glossy. *Size*—Very large in frame, but not looking so heavy as the bird really is; adults averaging about eight to nine pounds. *General Shape*—"Rangy" and long; and with the *carriage*, which is bold and upstanding, presenting an appearance somewhat between Spanish and Malay.

GENERAL CHARACTERISTICS OF LA FLÈCHE HEN.—Strictly analagous to the cock; the comb, wattles, and deaf-ears being of course smaller. *Size*—Averaging say about seven pounds. *General Appearance*—Rather more compact than the cock's, more resembling that of a Spanish hen. *Carriage*—The same remark applies.

COLOUR OF LA FLÈCHE.—Beak black or very dark horn-colour; comb and wattles deep bright red; deaf-ears a brilliant white; face red; eyes bright red or black, but generally red; legs very dark slate-colour or leaden-black; plumage glossy black all over, with bright green reflections.

GENERAL CHARACTERISTICS OF BREDA OR GUELDRES COCK.—*Head and Neck*—General appearance of head *outré* and strange, caused by the (in this variety) excessively cavernous nostrils and depression over them; beak rather small; comb absent, except that the skin is red over the nostrils, just above which is a slight hollow or depression, as if cut out rather concave by a penknife held transversely; nostrils cavernous; wattles long and pendulous; deaf-ears also pendulous; a small and rudimentary crest on the top of the head; neck medium length and well furnished, not carried back, as in other Polish Fowls. *Body*—General appearance neat, as in Polands; back wide at shoulders and tapering to the tail; wings medium size; breast full and broad. *Legs and Feet*—Thighs rather short and vulture-hocked; shanks short and feathered (rather slightly) down outside, but rarely to end of the toes; toes medium-size and well spread. *Size*—Medium, averaging in adults say seven pounds. *General Shape*—Resembling Polish fowls. *Carriage*—Plain and "business-like."

The general characteristics of the hen correspond. Her weight averages about six to six and a half pounds.

COLOUR OF BREDAS OR GUELDRES.—In the Bredas or Black variety, the whole plumage is black, with generally little gloss, though this should be sought as in all black fowls. The beak is black or horn-colour; comb, or where comb would be, red; face red; wattles brilliant red; deaf-ears sometimes white and sometimes red, but white is decidedly to be preferred; legs dark slate or black. In the Gueldres the plumage of both sexes resembles that of the Dominique fowl. There are also White Bredas.

GENERAL CHARACTERISTICS OF LA BRESSE.—In all respects resembling those of the Dorking as far as possible, with the exception of the fifth toe. The size should average eight to ten pounds in the cocks, and six to eight pounds in the hens. No standard can be given for colour.

VALUE OF DEFECTS IN JUDGING.

1. HOUDANS.

Points of Merit.		*Defects to be Deducted.*	
A bird perfect in shape, carriage, and colour, and in perfect health and condition, to count in points	100	Bad comb	7
		Deficiency in crest or muffling	12
		Straw-coloured feathers	9
		Plumage too light, or too dark, or unevenly broken	8
		Want of size	20
		,, ,, symmetry	12
		,, ,, condition	15

DISQUALIFICATIONS.—Absence of fifth toe. Absence of muffling, of beard, or of crest. Red or brown feathers in plumage, or total absence of black or white. Yellow or feathered shanks. Wry-tails, or any other bodily deformity. Any fraudulent dyeing, dressing, or trimming.

2. CRÈVECŒURS.

Points of Merit.		*Defects to be Deducted.*	
A bird perfect in shape, carriage, and colour, and in perfect health and condition, to count in points	100	Bad comb	12
		Deficiency in crest or muffling	12
		White in crest in Blacks, or black in crest in Whites*	15
		Want of size	20
		,, ,, symmetry	15
		,, ,, condition	15

DISQUALIFICATIONS.—Absence of muffling, beard, or crest. Red, brown, or straw-coloured feathers in plumage. Feathered shanks, or any colour but black or leaden-black. Presence of fifth toe. Wry-tails, or any other deformity. Any fraudulent dyeing, dressing, or trimming.

3. LA FLÈCHE.

Points of Merit.		*Defects to be Deducted.*	
A bird perfect in shape, carriage, and colour, and in perfect health and condition, to count in points	100	Bad comb	7
		Stained deaf-ear	8
		White face	8
		Want of size	20
		,, ,, symmetry	15
		,, ,, condition	20

DISQUALIFICATIONS.—Presence of crest. Entirely red ear-lobes. Shanks feathered, or any other colour but black or leaden-black. Coloured feathers in plumage. Wry-tails, or any bodily deformity. Any fraudulent treatment.

* This would practically be disqualification in good classes.

CHAPTER XXVII.

AMERICAN BREEDS OF POULTRY.

IN the days when the controversy as to the origin of Brahmas was still "hot and strong," a noted English amateur penned the fervent wish, "If Brother Jonathan *made* these fowls, I wish he would make us something else." We have in an earlier chapter shown reasons for believing that B. J. did *not* make the Brahma fowl; but "something else" he has made undoubtedly, there being several very distinct American varieties well worthy the attention of English poultry-keepers. These we have now to attempt to describe.

There our difficulty commences, for the names of American "breeds" are legion. Land is plentiful and corn is cheap, and accordingly the American runs and breeds his fowls on a magnificent scale which is enough to make an English fancier's heart burst with envy, and himself to abandon the "rotten old country" in disgust. Where the one rears his few dozens of chickens the other rears his hundreds; and these chickens are mostly brought up with a noble contempt for fences and other unjustifiable restrictions upon the liberty of the subject, which befits even the feathered denizens of such a vast, free, and enlightened country. The consequence of such a state of things, before the extension of the "fancy" caused attention to be paid to scientific breeding, was innumerable crosses, and not a few of these seem at one time or other to have settled into more or less fixed types. Thus the curious investigator into American poultry-keeping meets with fowls rejoicing under such names as Danvers Whites, Bucks County Fowls, Jersey Blues, the Ostrich Fowl, the "Big Breed" (whatever this last was we have been utterly unable to discover), and other names of like nature. Most of these have now died out, and some no doubt were mere first crosses, which could not possibly be preserved; though others, such as the Jersey Blue, which was at one time much esteemed, evidently possessed certain well-marked and permanent characters. But as time went on, some few breeds have not only preserved their points and reputation, but even perceptibly gained ground; and there are at least three American varieties known and bred at the present day which are valuable acquisitions to the poultry-yard. One of these at all events—the Plymouth Rock—was admittedly made by a cross; and the fact gives another occasion for expression of the regret that so little has been done in this direction by the skilled breeders of Britain, seeing that without any special care such results have been attained in both the Eastern and Western Continents.

The importations that have taken place, even of the most marked and fixed American varieties, have by no means bred so true to feather and points as English fanciers are accustomed to expect. The cause of this, we believe, is to be found in the large resources to which we have just alluded. Where a man breeds hundreds of chickens, he has in the first place to set eggs from *many hens*, which cannot be selected of equal quality to a very few. Out of such a large supply, however, it is very hard if he cannot select a few good pens; and hence there is not the necessity for that extreme care in breeding which is forced upon an English amateur, who can perhaps only afford room for a score of chickens in all, and to make his heavy expenses pay must produce out of that

small number at least half that are fit for exhibition. Just as the great natural disadvantages he has to fight against make the Scotch agriculturist the best in the world, so his small yard *forces* the English fancier, if he breeds his birds and does not buy them, to breed *well;* while the unlimited space and food-supply of the American tempt him to a profusion and carelessness of procedure which greatly hinder fixity of type, and have hence caused some cross-breeds, which, though originally accidental, were evidently novel and valuable, and might with care have been preserved, to die out and become lost in either the parent varieties or a mongrel crowd. Without further preface, however, we will proceed to consider the principal American breeds of poultry.

LEGHORNS.—Of the existing American varieties, this has been the longest known in England, though not perhaps as long as some others in America. The first specimens imported into the United Kingdom, so far as we are aware, were of the White breed, the gentleman who received them breeding from them one season and then parting with the whole stock, which has since become tolerably diffused. One or two other importations have since taken place, but nearly all these birds were somewhat too short on the leg and pale in the shanks to please the taste of the best American judges; and those represented, which were sent over specially for portraiture in this work, are certainly the best yet sent to England, having the rather long and brilliant yellow legs, with the general "high-bred" look, so much sought by American fanciers.

The *American Agriculturist* for March, 1869, contains an article on White Leghorns, with an illustration, in which the editor states that his own knowledge of the breed "does not antedate ten years;" and that the earliest stock to which his attention was then directed "generally" had yellow legs, single combs, and white ear-lobes, and were principally bred from freshly-imported stock. As to the character of the fowls, he confesses himself rather puzzled, stating that while they had been called "White Spanish," they knew of "no proper White Spanish" in the United States, and "no true breed" of them had been established, concluding with the opinion that they more resembled Hamburghs. Now we have already seen that there have been in England for many years true breeds, both of White Spanish and White Minorcas, though both of these breeds have either white, pinky, or dark legs. It is, therefore, somewhat remarkable to read in the same article that "pink or white legs are of constant occurrence in the yards of the very best breeders, so far as we are aware, ar[illegible] to throw out either class of birds would clearly be doing injustice to their other good poi[illegible] We say it is remarkable to read this, because if the reader turn to the beautiful plate of White Leghorns which illustrates this chapter, and supposes white shanks in place of the yellow, it will be seen at once that the birds are White Minorcas in every point, and beyond a doubt belong to the Spanish family. This family, we have already seen, abounds all round the Mediterranean; and there is no reason whatever to doubt, therefore, that the birds may have been received, as it is stated many late American importations have been, from Leghorn, rather than from Spain; indeed, it is rather probable than otherwise, for whilst it is evident enough that the birds are essentially Spanish or Minorca in all their external characteristics, as also in their non-sitting, it is fully as evident that they belong to a *distinct strain* or race of these birds; for while most Spanish breeds are delicate, the Leghorns are extraordinarily hardy, besides being much superior as layers. That American breeders have improved one of these qualities, and the American climate the other, is very probable; but however this may be, few who have kept the breed will feel inclined to dispute our conclusion, that in the Leghorns our American friends have given us a fowl essentially Spanish in every character, but which in hardiness and prolificacy is far superior to any of the older Spanish varieties, unless Andalusians may be an exception.

Mr. W. Simpson, of West Farms, New York, who sent us [illegible]White Leghorns portrayed, has favoured us with a short communication covering the egg sta[illegible]s below, in which he states that he *believes* he was the first person in America to breed the [illegible]horn fowls. In the year 1853 he purchased from a young man, who had got them from a shi[illegible]om what port the ship came he did not learn), a cock and four hens White Leghorns, and one [illegible] Leghorn hen. They differed from the fowl of the present day in that they were somew[illegible]arger and had *white* legs. (See our remarks above as to the legs of the Minorca.) He br[illegible]se fowls in-and-in before he could get any fresh blood to cross with them, and from the h[illegible]n he bred some magnificent Dominique Leghorns* (what are called cuckoo colour in [illegible]d), which he exhibited at the American Institute Fair in New York City several years[illegible]e they attracted much attention, but being a new breed no prize was offered for them. [illegible]t the year 1860, he says, some importations of yellow-legged birds were made, and the [illegible]our being preferred, the white-legged ones soon disappeared. We are however of opinio[illegible]already stated in the chapter on Cochins, that in the majority of cases the yellow leg and [illegible]ardiness together have been introduced by a cross with the Asiatic; to which cross Amer[illegible]eders are, as will be seen, very prone, and which is *known* to have produced in the Danvers [illegible]te breed an almost similar result.

The White Leghorn fowl [illegible]been bred with care for a number of years by several breeders, and they are now medium-siz[illegible]owls with large combs (upright in the cocks, and falling over in the hens, just as in Spanis[illegible]ire white ear-lobes, red faces, white plumage, and brilliant yellow legs. The character of th[illegible]d and shape of body is decidedly Spanish in appearance. Their flesh, Mr. Simpson says, i[illegible] very superior for table use, but passable; but they are remarkably good as layers of large [illegible]e eggs, and are non-sitters. As definite proof is better than general remarks, Mr. Simpson [illegible]indly sent us statistics of a small stock for three separate years, adding the remark that "the [illegible] were well fed, and in the spring kept confined, to keep them out of the garden." His table is as follows, only the total for each year being added by us:—

YEAR 1854. SIX HENS LAID.

Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
104	93	102	123	142	107	32	24	60	79	54	34	954

YEAR 1856. TEN HENS LAID.

Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
163	205	241	219	169	171	120	47	19	29	47	98	1528

YEAR 1868. FIVE HENS LAID.

Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
84	96	102	119	104	97	53	21	35	33	26	43	813

* The relation of blue or slate-colour, and this Dominique marking, to white and black, we have before pointed out on several occasions.

It will be seen that the average of the first of these tables is 159 eggs per hen per annum, of the second 153 eggs, and of the third 162 eggs; and as some of the hens would doubtless lay better than others, the performance of the best must have been very high indeed. Indeed, we must in justice place the Leghorns amongst the very best layers of any fowls we know; while it is a great advantage that the breed appears to bear moderate confinement very well, not requiring free range as do the Hamburghs, which are the only fowls that can be compared with them in this respect; and having also the advantage of being thoroughly hardy and easily reared.

Of the trio of White Leghorns sent over for portraiture to us, one hen unfortunately died just after receipt (appearing to have been injured in some way); but the other laid the very next day, and continued to do so. We note this fact as showing the adaptibility to confinement, as the birds had been in a small coop for some fourteen days. The remaining pair were kept some time by a relative, during which time the hen fully maintained her character as a good layer.

We should note that there is a difference of opinion among American fanciers as to the tail of the White Leghorn cock. One school holds that it should be carried very high over the back, or "squirrel-tailed," as we should call it, whilst others maintain that it should have the free and sweeping carriage of the Spanish fowl. The tail of the cock sent to us was rather inclined to be high, though not so much so as many American specimens of which portraits have been forwarded to us; but coming to us with a note to the above effect, we have exercised our own individual preference in this matter, and represented him with the tail as we consider it should be carried. In this decision we have the concurrence of many who keep Leghorns in England, and believe that the squirrel-tail will ultimately be abandoned, if for æsthetic reasons alone.

In breeding White Leghorns, the chief points needing attention will be, to avoid the straw tinge which troubles the breeder of all white fowls, and to keep in perfection the rather long and brilliant yellow leg and pure white ear-lobe which so much set off this attractive breed. The cock's tail may be bred either way with no difficulty whatever.

A variety still more esteemed is the *Brown Leghorn*, which has come into considerable notoriety of late in the United States. It appears to have been bred for some time, but little known; and the description in the published editions of the "American Standard of Excellence" is grossly inaccurate and incomplete, evidently owing to ignorance of the fowl. During the last two seasons, however, the breed has become more and more popular, and in 1872 eggs of it were advertised at the high price of ten dollars per dozen. From an article by Mr. A. M. Halsted on Brown Leghorns, in the *New York Poultry Bulletin* of May, 1873, we make the following extracts:—

"This beautiful variety is daily growing in favour and popularity, and bids fair, at no distant day, to excel the White variety in the estimation of amateurs and breeders.

"Rather larger than the Whites, they are also more hardy; and being a yellow-skinned fowl, are more pleasing in appearance to the epicurean tastes of our fanciers. As egg-producers they are unrivalled; pullets frequently commencing to lay at four and a half months old, and continuing without cessation until well into the winter. Among New Hampshire farmers they are quite popular, owing to their strong constitution and their excellent health during the long tedious winters. It is only quite lately that they have created any sensation at our poultry-shows, and only the past year that the numbers shown have made the work of the judges anything more than a short inspection.

"The earliest knowledge we have of them is from Mr. F. J. Kinney, of Worcester, Mass., who writes:—'The first I ever owned I bought on board a ship in Boston Harbour, in the spring of 1853. This was the first trio I ever saw, and I believe them to have been the first ever brought to

America. I have since had two other small lots direct from the city of Leghorn, in Italy, and expect more soon from the same place. The first trio weighed nine pounds and three-quarters, and were yearlings. Their combs and wattles were very large and coarse; ear-lobes *entirely red*, same as face, comb, and wattles. They were not Black-red Games, nor Black-red Leghorns, but *Brown-red, i.e.*, the cock's breast was dark brown, *spotted* with lighter brown, the dark brown running up the under side of the neck; his hackle was light brown, striped with black; the hens were feathered and coloured the same as the good ones are now, the colours being very distinct, and the pencilling the most beautiful of any fowl I ever saw, and the most distinct.'"

We have seen that there is some doubt as to the origin of the White breed; but besides the above importation, many others from Leghorn have been made since of the Browns, so that in their case at least the name is appropriate enough. Of this fact we have not the slightest question, having had it confirmed from numerous American correspondents, who testify to having seen birds recently imported either from Leghorn or other ports in Italy; but as to another point named by Mr. Kinney, the colour of the ear-lobe, there seems to be a great difference of opinion among American fanciers—Mr. Halsted and some others believing that the deaf-ears on the earlier importations were red, while Mr. A. Beard, Mr. W. E. Bonney, and other breeders, say the early birds had *white* ears. The natural supposition would be that *both* were imported; and the difference is of little consequence, since all agree that the deaf-ears *ought* to be white. Of this there can be no question, as it not only agrees with the whole Leghorn or Spanish type, but is incomparably superior in appearance. There is, however, yet much difficulty in breeding all the chickens with white ears, but this, no doubt, will be accomplished before long.

American breeders have unquestionably much improved the Brown Leghorn since its first importation, which would account for the breed only lately coming into notice. Mr. W. E. Bonney writes of them:—

"In Brown Leghorn fowls, their gay plumage, lively appearance, and, in fact, every feature connected with them is attractive and pleasing; and in this class we must soon recognise the leading variety, whether for fancy or profit. They mature early; I have known pullets to commence laying at three months of age, and continue laying during the entire season. They are non-sitters; and I never saw a case of roup or any hereditary disease among my fowls during the whole period of my successful breeding. I have bred all classes of fowls, and by far give the Brown Leghorn the preference; I shall continue making a speciality of them, adding fresh-imported blood when needed. I have bred them since 1860 (the first importation ever made into this country being in 1855), and when I commenced to breed they would hatch all colours—brown, black, Dominique, and in 1862 I had one white chicken (a pullet). Since then I have added fresh blood, sparing no pains to get select stock, and by careful breeding have accomplished their hatching true to colour."

The first Brown Leghorns ever received in England were sent to ourselves, by the kindness of Mr. A. M. Halsted, specially for portraiture in this work. They arrived on June 17th, 1872, one hen again being unfortunately injured in some way, bleeding profusely from the beak, and dying a few hours after receipt. The other hen laid next morning, and continued for a few days, when she stopped; this fact, as in the White birds sent us, showing well the laying qualities of the breed. We might describe the birds very briefly as combining the Spanish comb and type of head and body, with the colour or plumage of Black-red Game of a rather darkish type; the cock being a black-breasted bird, with hackles orange-red striped with black, and the hen salmon-breasted, with rest of the plumage partridge-marked, or brown finely pencilled over with dark markings. They are somewhat larger than White Leghorns, and rather shorter on the leg, averaging about half a pound heavier in the opinion of American breeders.

Being anxious to test the stock, and having some suspicion the birds might have been created by crossing White Leghorns with Game, we hatched a brood of chicks on the 1st of August. Except one or two broken, every egg hatched, and not a chick died. We know no fowls which feather so quickly, except Houdans and Andalusians. Being very short of room and accommodation, owing to a recent removal, the chicks had an open shed to roost in, but grew up perfectly hardy, and with no care whatever, in spite of the very late date of hatching. They were very uniform in colour in their first feathers, but in their second or adult plumage two of the cockerels moulted black, all but some reddish feathers on the hackle and wings. The pullets varied little, two being just like the mother, and the rest of the same type, but darker, somewhat like darkish grey Dorkings. One cockerel was just like the father, and a fourth *brown*-breasted. On the whole, and considering the want of what English fanciers consider careful breeding in nearly all American stock, we were surprised and gratified by the degree of uniformity thus apparent, and fully convinced that the breed was genuine, or a really distinct race.

Tastes differ, but we were much pleased with these fowls, and much regretted that utter want of accommodation at that time prevented our keeping more than our old favourites, the Brahmas. A neater and more pleasing style of bird could not possibly be; and as layers we consider this breed the *best we have ever met with* for moderate confinement. The Silver-spangled Hamburgh may even surpass it on a wide range, as regards the number of eggs, but these are inferior in size; and the Brown Leghorn will thrive in a moderate-sized yard. The hen laid an egg nearly as large as that of a Spanish fowl, and after moult recommenced early, before any of our Brahmas had "begun to think about it." We shortly afterwards disposed of the whole to Mr. R. J. Walker, of Edgworth, Bolton, who unfortunately lost the hen a month or two after, through her swallowing a sharp-pointed piece of glass, but who gives the following account of the progeny (dated May 28th, 1873):—

"As regards laying, I find that, taking the five pullets together, I have had an average of five and a quarter eggs per bird per week. No. 1 began to lay on February 17th, No. 2 on February 19th, No. 3 on March 6th, No. 4 on March 11th, and No. 5 on March 27th. No. 5 is not so good as the others in number of eggs, but lays far larger ones. I find the eggs average about eight to the pound from the pullets; those I got from the old hen were larger. They do not seem much influenced by change of weather in regard to laying, keeping on much as usual through the bitter east winds we had. I have only nine chicks from them, three of which were hatched March 26th (two of which were from eggs of the old hen) and six on May 6th. They are as hardy as it is possible for chicks to be; I have not lost one, and have had no trouble with them. They feather very rapidly. Mine have always been under a coop open to the south, and have had free range at all times. I may add that the three earlier ones were left by the hen when five weeks old, but they did not seem any the worse for it." Since this letter we have heard from the same gentleman that one of the pullets has attempted to sit.

If it be remembered that the birds here spoken of were hatched on August 1st, it will be seen that they laid unusually early. They would also be smaller than usual, for the same reason; and, on the whole, no more favourable account could be given of any fowls. We can only add that we killed one of the cockerels in order to test the quality of the flesh, which proved very good, being much more juicy than that of the White Leghorn. How far the breed may be admired by fanciers we cannot tell, the death of one hen preventing any attempt to exhibit; but our decided opinion is that in intrinsic value the Brown Leghorn is the *best* of all the American breeds, especially if size as well as number of eggs be taken into consideration. The constitution is hardy; the shape and carriage sprightly; the colour neat, handsome, and at

the same time adapted for wear; the flesh very good; the growth quick; and the eggs both large and numerous.

The published American "Standard" merely describes the plumage of the cock, and says no more than that the breast should be black splashed with brown, and the wings reddish-brown. This is both incomplete and grossly inaccurate. We have, however, been so fortunate as to receive, by Mr. Halsted's kindness, a copy of a carefully-revised Standard, which he has prepared for the corrected editions shortly to be issued; and which, though copyright, we have his permission to publish in these pages. We shall ourselves, from the birds sent us, describe one or two points a little differently; especially as, from our actual experience with the chickens, we are disposed to doubt the wisdom of insisting upon the black stripes in hackle and saddle of the cock. Our own impression is, and it is confirmed by the long experience of Game breeders, that heavily-striped birds will have a tendency *to breed chickens too dark*, as we found to be the case; and that as breeding the variety settles down more, it will be found best to allow the hackles to be simply various shades of red or orange-red, with more or less of black in the bottom hackles only. It is somewhat singular that we are in this corroborated by a description sent us by Mr. W. E. Bonney. In brief, we believe the true colour for fixed breeding will be that of the *dark* or "No. 2" Black-red cock, described by Mr. Douglas at page 285 as the proper mate for "rich" partridge hens, which precisely describes the colour of the Brown Leghorn hen. By this mating alone, we believe, will the proper balance of colour be preserved, so as to breed both sexes alike good and with the *minimum* of variation.

Of the birds sent to us, the hens had pure white ear-lobes, but those of the cock (an old bird) were stained round the edges, and more bluish than white in the centre. With every successive season this point may be expected to improve in imported birds; and the white ear-lobe should certainly be sought by all who want the fowl for anything but farm-stock. For this latter purpose it is excellently adapted where eggs are an object; indeed, we cannot but repeat our opinion that as a productive fowl the Brown Leghorn cannot possible be excelled under any circumstances.

The greatest practical difficulty in keeping any non-sitting breed of poultry, like Leghorns, is that of obtaining a sufficient number of hens from other sources to hatch and rear the broods, which in a large stock is sometimes a serious obstacle. From the introduction of two such valuable races of non-sitting poultry as Houdans and Leghorns during late years, the need of a really practical incubator is more felt than ever; but even in the absence of this,* much can be done to remedy the inconvenience by bringing up the chickens artificially, or without the hen, leaving her to hatch a second brood, and then dismissing her. We have already (page 74) given Mr. Halsted's views in favour of this practice, coupled with somewhat of a doubt as to this mode of rearing being, however, *quite* equal to the care of a hen, much less superior to it. We had, however, never applied the system ourselves to the *whole* chickens of a season, which we have since learnt is essential to

* Since our notes on Incubators in Chapter V. were written, Messrs. Graves & Co.'s Incubator has been largely sold, and we hear from numerous American correspondents has achieved a great amount of real *success in work*. At the great Boston Show in the spring of 1873, it hatched throughout most successfully, and one old and valued correspondent, hitherto an entire sceptic, wrote to us saying, "Jacob Graves' machine has convinced me; he has unquestionably made the incubator a success." Mr. Wren has also brought his apparatus nearly to perfection, and though we are not at liberty, and are not even able, to give particulars as to the means by which particular difficulties have been overcome, we may state that the great secret of this gentleman's success, as we have already hinted would probably be the case, has been so simple a thing as the mere provision of a constant circulation of *fresh air*. This has been overlooked, more or less, in all previous machines; for a mere "ventilating pipe" by no means answers the necessary ends. In nature, every movement of the hen gives air, which also percolates freely through her feathers; and attention to this one simple point has given more success than all the complicated contrivances hitherto so uselessly brought to bear upon this problem.

a really fair trial, since under a partial attempt the chickens with the artificial mother are tempted away to the hens with other broods, and thus get fretted. We were, however, exceedingly interested to see, in May, 1873, the working of the artificial system as thoroughly and *entirely* carried out by Mrs. Frank Cheshire, of Acton, Middlesex, so well known for her fine stock of Light Brahmas. We saw there upwards of seventy chickens, all brought up under an "artificial mother," as *one brood.* They ranged in age from three months to three days, but there was no fighting, or tyranny of the strong over the weak; not one had died (more than we could say of our own), and there was not one sickly or discontented chick in the whole lot; while we were most of all interested to observe that the birds were *larger* for their age than our own; and that the trouble was *nil* compared to that of a dozen hens with their broods, to which we went back with a most discontented mind.

The "mother" was about four feet six inches long by sixteen inches wide; the top, or heating portion, consisting of a flat tank about one inch deep, with the top soldered on, and having only one inlet for pouring in water or immersing the bulb of a thermometer to ascertain the temperature. This tank extends all over the mother, and is kept in position by a wooden frame, which supports it, at about six inches high at the front and some three and a half inches behind. Under the lower or back edge, occupying some two inches of the under side, a flue extends the whole length of the tank, which is provided with two chimneys, one at the end or corner near the lamp, the other at the further extremity of the flue. This is necessary for such a long horizontal flue: for without the first chimney the carbonic acid would flow back and put out the lamp when first lighted, though it will freely travel to the further chimney when the flue is warm; moreover, if the night be warm the first chimney alone may be left in operation, but if cold, the heated air is compelled to pass along the whole length of the flue. The tank has a partition soldered in it, round which the water circulates; and by this means the temperature hardly varies in any part. The lamp is merely introduced under the end of the flue. Any good lamp will do, but Mrs. Cheshire's was the most simple and yet most perfect in its action which could possibly be. A piece of small brass pipe was put through a loosely-fitted cork (loosely fitted to give air) in a common glass bottle partly filled with benzine. This bottle is laid on its side on the ground, and a wick being passed through the pipe, the nearly horizontal position of this simple wick-holder enables capillary attraction to draw sufficient fluid through such a length of pipe (eighteen inches if required) that the most explosive liquids can be used without the slightest danger; moreover, such a wick trims itself, as if drawn too far out the surplus is at once burnt off, and a small and nearly smokeless flame produced without any trouble whatever. This lamp is better trimmed twice in twenty-four hours, but will burn tolerably for even the whole of that time without attention.

Under the tank fits a frame which slides in and out, on the top of which canvas is stretched, to which are sewn the ends of strips of flannel or felt carpet—about two and a half inches long by half an inch wide—which give warmth to the chickens. Mrs. Cheshire informs us that she finds this better than sheepskin, never entangling and strangling the chicks. Under the whole slides a wooden floor, covered pretty thickly with dry mould, which is renewed every day. In the morning the mother would have a little unwholesome smell from the bodies of so many chickens; but our ingenious informant had found an effectual way to remove this, which was easily done by turning the canvas part of the mother upside down, throwing a few shovelfuls of dry earth among the flannel strips, shaking the earth well in, and after letting it remain a few minutes shaking all out again, the little earth that remained adherent coming off on the chickens, and thus benefiting them in another way. This, and the lamp in cold weather, was all the care required, beyond that of the newly-hatched chicks, which was rather a pleasure than otherwise. A rail fence in front of the

mother prevented the chickens using it after reaching a certain size, but they were still allowed access to one unwarmed, almost precisely similar to that figured by us at page 75.

The few difficulties found at starting had been easily overcome. The two essentials were: first, that the chicks were *immediately* taken from the hen, so as never to miss and fret after her; and, secondly, that for about two days they needed keeping in a box floored with dry earth, with a small mother at one end, so that they could not wander away from it. This was "the preparatory school for *young* gentlemen," its sole object being to teach them to *know* the apparatus and how to go under it. As soon as they were perfect in this lesson they were turned down with the others, the whole being treated as one large brood, and agreeing perfectly. Mrs. Cheshire's small mother consisted of an ordinary india-rubber foot-bottle filled with boiling water, and placed over canvas about ten inches square, stretched on a frame, and furnished with flannel strips as in the case of the larger one. This occupied half of a common wooden box, the chicks having the other half to run out in. If a few thicknesses of flannel are placed over the bottle, it will keep it warm enough for a whole night; and even when boiling will not be too hot for the chicks, the india-rubber and mother under being bad conductors of heat. Should such a separate infant nursery be thought troublesome, Mrs. Cheshire suggests that a small portion of the larger mother may be penned off and furnished with a small enclosed run in front, so that the chicks cannot wander away till they have learnt to know it, which is the sole object desired.

Both plans of rearing having been fairly tried by the lady from whom we have obtained these interesting particulars, the comparative results are stated by her as follows:—"The advantages of the artificial plan seem to be—1. Great economy of hens if they are needed for laying. If a hen be kept cooped with chicks for three weeks [and we should say five weeks is nearer the mark], she has been six weeks out of the breeding-pen; and after she is returned to it her first four or five eggs will not be fertile. 2. Economy in food; as all eggs, grits, and other dainty food go to the chicks. Special dainties for very young ones are easily given in a feeding-coop, through which the larger ones cannot pass. 3. Economy in labour of feeding and cleaning. This is very great, while there is always capital dry accommodation for the chicks on wet days. 4. The extreme *tameness* of the chicks. A hen often prevents her brood feeding till the attendant has gone; but under this system little chirpers of three or four days old will run and flutter up to whoever has the charge of them; and they never seem to fight or quarrel. 5. The impossibility of losing chickens by trampling. 6. The greatly increased cleanliness of the chickens, which retain the utmost purity of their beautiful down until its loss. Our experience also proves that they feather more quickly. And, lastly, increased size; we find that we get the same weights on this plan at ten weeks old which we formerly got at twelve weeks. I might add the possibility of raising fine chicks early in the year; since if cold weather comes on they can nestle even at eight or ten weeks old if they will."

We ought to add that we were thoroughly convinced by actual inspection of the great superiority in every way of this plan of rearing, and that Mr. Halsted's enthusiastic praise of it was fully borne out. The principal reason of the success is, in our opinion, that every chick can have *as much brooding as it likes*, whereas, when with the hen, weakly ones may often be seen and heard entreating warmth and shelter which the vigorous ones do not need, and which the hen will not give. These chicks die off, while with the artificial mother they are nourished into strong birds. The only difficulty is to tell the different strains, which to the fancier is important. Mrs. Cheshire effected this by *dyeing* them on the back. By the time this disappears the memory can often be trusted; and if not they can then be marked in other ways.

The subject is so important to many, that we have thought it well to give this further information upon it while treating of the last of the more useful non-sitting breeds of poultry.

The following is the American "Standard" for Leghorns. That for the Whites, and the Scale of Points, is copied from the authorised edition already published. The description of Brown Leghorns, as before stated, has been kindly sent us by Mr. A. M. Halsted, of Rye, New York, as revised by him for future editions. By our own schedule at the close of this chapter, it will be seen we think his description in certain parts of the cock somewhat too dark, for which we have already given our reasons.

WHITE LEGHORNS.

The Cock.—*Beak*—Rather long and stout. *Comb*—Bright red, large, erect, single, straight, and free from twists or falling over to either side, deeply serrated, extending well back over the head, and free from side sprigs or excrescences. *Head*—Short and deep. *Eyes*—Large and full. *Face*—Bright red, free from wrinkles or folds. *Ear-lobes*—Pure opaque white, rather pendent, thin, fitting close to the head, smooth, and free from folds and wrinkles. *Wattles*—Bright red, long, thin, and pendulous. *Neck*—Long and well hackled. *Breast*—Full, round, and carried well forward. *Body*—Rather square, but heaviest forward. *Wings*—Large, and carried well up. *Tail*—Large and full, carried very upright; sickle-feathers large and well curved. *Thighs*—Medium length and rather slender. *Legs*—Long, bright yellow. *Plumage*—Hard and close; pure white throughout; the neck, hackle, and saddle may be tinged with gold or straw colour. *Carriage*—Upright and pleasing.

Disqualifications in White Leghorn Cocks.—Comb falling over to one side or twisted; plumage any other colour than pure white, with a golden (straw-coloured) tinge on the neck, hackle, and saddle; legs other than yellow; any red about ear-lobe.

The Hen.—*Beak*—Rather long and stout. *Comb*—Bright red, large, single, and drooping to one side, serrated, and free from side sprigs. *Head*—Short and deep. *Eyes*—Large and full. *Face*—Bright red, free from wrinkles or folds. *Ear-lobes*—Pure opaque white, rather pendent, thin, and fitting close to the head, smooth, and free from folds or wrinkles. *Wattles*—Bright red, thin, and rounded on the lower edge. *Neck*—Long and graceful. *Breast*—Full and round. *Body*—Deep, broader in front than back. *Wings*—Large and well tucked up. *Tail*—Large and full, carried very upright; feathers broad. *Thighs*—Rather long and slender. *Legs*—Long, yellow. *Plumage*—Hard and close; pure white, the more free from a yellow tinge the better. *Carriage*—Not as upright as the cock.

Disqualifications in White Leghorn Hens.—Duplicature of comb; any red about the ear-lobe; pricked comb; plumage the least marked, or any other colour than white; legs other than yellow.

BROWN LEGHORNS.

General Characteristics.—Same as for White Leghorns, except that the shanks are shorter.

Colour of Cock.—*Beak*—Yellow. *Comb, Face, and Wattles*—Bright red. *Ear-lobe*—Pure opaque white. *Head*—Rich reddish bay, shading into lighter tinge on the neck. *Hackle*—Rich golden-red, each feather striped with black. *Back, Shoulder-coverts, and Wing-bow*—Very dark red, approaching black; on the lower part of back each feather tipped or mooned with golden-bay. *Breast, Under Part of Body, and Thighs*—Black. *Wing Coverts*—Rich metallic black. *Wing Primaries*—Black, each feather edged with brown. *Wing Secondaries*—Black, with the outside web broadly edged with brown. *Saddle*—Rich reddish bay, each feather striped with black, the stripe being quite broad near the butt of the feather, and narrowing to the point. *Tail*—Clear rich metallic black. *Tail-coverts*—Black edged with brown. *Legs*—Yellow.

Colour of Hen.—*Head*—Dark brown, the feathers slightly striped with black. *Neck*—Yellowish brown, feathers minutely pencilled with black, leaving a golden fringe-like margin of one-third the width of the web; the shaft of the feather white. *Comb, Face, and Wattles*—Bright red. *Beak*—Yellow. *Ear-lobe*—Opaque white. *Back and Shoulder-coverts*—Brown, irregularly pencilled with black; the finer and more minute the markings the better. *Wing Primaries*—Dull black, the outside web edged with brown. *Wing Secondary*—Inside web black, outside a rich brown, minutely and irregularly pencilled with black. *Tail*—Black. *Tail-coverts*—Black, pencilled with brown. *Breast*—Salmon-brown, the shaft of each feather white, the colour shading into lighter tint under the body. *Thighs*—Ashy-brown, finely pencilled. *Legs*—Yellow.

POINTS IN LEGHORNS.

Size	15
Comb	20
Face and Ear-lobe	20
Colour of Plumage	20
Symmetry	15
Condition	10
	100

DOMINIQUES.—This is perhaps the oldest of the distinctive American breeds, being mentioned in the earliest poultry-books as an indigenous and valued variety. In general characteristics it closely resembles a rose-combed Cuckoo Dorking with four toes, or rather the Scotch Grey, but with brilliant yellow legs, which the Americans seem to admire in all their fowls. The comb should be a neat rose, resembling that of the Hamburghs; face, wattles, and deaf-ears red; legs bright yellow; and the plumage what English fanciers call cuckoo-colour, which is composed of a light bluish-grey ground, crossed with bands of a darker grey or blue. The shape is Dorking, and the size medium, averaging perhaps seven to eight pounds in adult cocks and six pounds in hens.

Figs. 93 and 94 represent the feathers of Dominique cock and hen, taken from the stock from which our plate is drawn. The shade of colour varies, the darker bands in some specimens being nearly black; but a medium colour is preferable. Whatever the shade, however, the hackles and shoulders of the cocks should partake of the same character, and be free from reddish or golden feathers, which are blemishes very apt to occur, but which may be guarded against by careful breeding. These remarks, the drawings of the feathers, and the description of the plumage will apply to a large class of poultry, called by the French, as by ourselves, *Coucou*, from its resemblance to the plumage on the breast of that bird. Cuckoo Dorkings, Cuckoo Cochins, Anconas or Cuckoo Spanish, Cuckoo Polish, Gueldres or Cuckoo Bredas, Scotch Greys, &c., all have this plumage; which differs from that of Pencilled Hamburghs, to which it bears some resemblance in the transverse character of the markings, in that the pencillings or bars are much larger or coarser; and more essentially (since mere size of marking could soon be modified by breeding) in the bands being in this case *shaded* gradually dark into light, instead of presenting the sharp contrast of marking and ground shown by what are called Pencilled birds.

The Dominique is an excellent layer, very hardy, and good for table. It grows fast and feathers quickly, while its plain homespun suit makes it very suitable for countless localities where more showy or "valuable-looking" fowls would be imprudent or out of place. The general appearance will be sufficiently gathered from our plate, the originals of which are birds of the second and third generation bred from imported stock by Mr. T. D. Galpin, of Putney Heath. So far as we know, the progenitors of these birds were the second importation which has taken place, the first being a pen sent to the Birmingham Show of 1870, where they were quickly claimed. We have been unable to trace these first specimens.

The Dominique is superior to the Scotch Grey in laying qualities, and to the Cuckoo Dorking in both this point and hardiness as well. The yellow legs are against it as a market fowl; but we have reason to believe the prejudice in favour of white legs is to some extent wearing off even in London poultry markets. However this may be, we have no hesitation in recommending the Dominique as one of the most generally useful "all round" fowls we know. It is to be regretted that in its "native home" it has been of late comparatively neglected, owing to the preference for "imported" stock of all kinds; and we hear from all our many American correspondents that it would have been far easier to procure first-class specimens ten years ago than now, many of the old strains having been allowed to become crossed and tainted in blood. The birds sent to Mr. Galpin gave evident proof of this careless breeding, many of the first generation of chickens being quite black in colour, and several having single combs; but all fully bore out their character as good and useful fowls. We have heard similar accounts as to the uncertain type of many American yards; but a year or two of even moderately careful breeding will speedily banish all such irregularities, this colour being bred with comparative ease. The best mode of breeding it is to select hens of a pleasing medium shade, such as that desired, and to put with

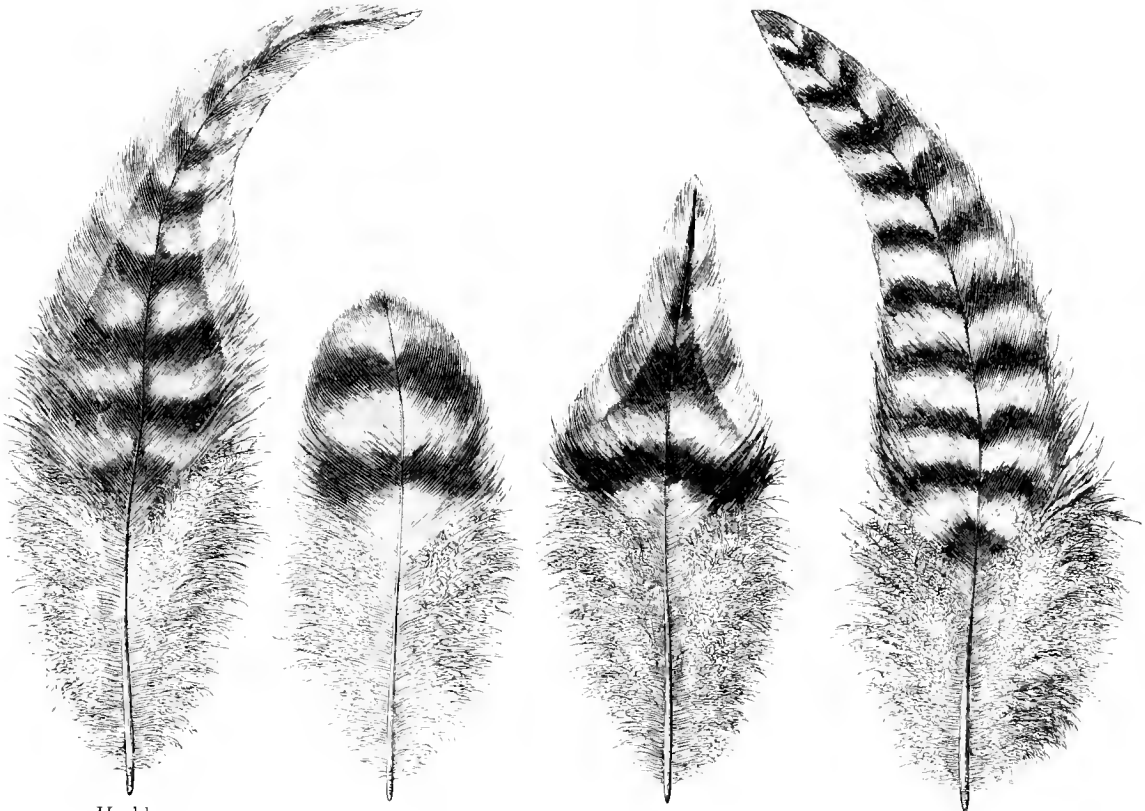


Fig. 93.—FEATHERS OF DOMINIQUE COCK.

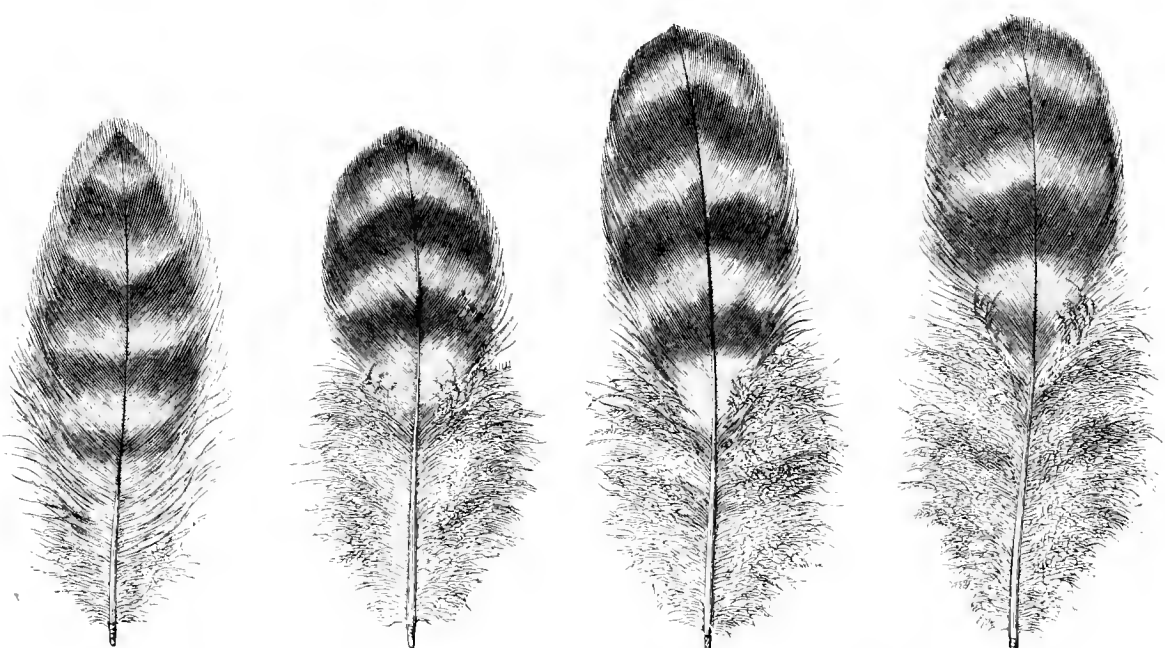


Fig. 94.—FEATHERS OF DOMINIQUE HEN.

them a cock slightly darker, carefully avoiding birds with either red or black feathers, and as far as possible even hackles of a golden-colour; by which means, with a little patience, a strain may soon be formed that breeds a pure blue-grey. The most difficult point is to get enough depth of colour in the cock without obtaining sickles or tail-coverts nearly or quite *black;* hence it is necessary at first to raise as many chickens as possible from the first stock, in order to have plenty of material for selection. Besides the colour, the neat rose-comb, red ear-lobes, and brilliant yellow legs, with fine shape and size, are all that need to be attended to in breeding Dominiques. This variety was one of the parents of that next described.

The following is the American "Standard" for Dominiques, copied from the authorised edition. It is somewhat too vague and general in description to be of much service.

DOMINIQUES.

General Shape and Colour.—*Comb*—Rose, large, bright red, similar to Hamburghs. *Wattles*—Red, well rounded, medium length. *Beak*—Yellow. *Legs*—Yellow. *Deaf-ear*—Red. *Plumage*—A light blue ground, shaded with a dark slaty blue all over the body, forming bands of various widths.

POINTS IN DOMINIQUES.

Size	25
Comb	20
Plumage	25
Symmetry	20
Condition	10
	100

Disqualifications in Dominiques.—Legs other than yellow, or feathered; combs other than rose; splashes of white in the breast or back; fowls not matching in pen; red or brassy colour in hackle or saddle.

PLYMOUTH ROCKS.—The variety now known by this name has never yet been correctly described in any work on poultry; all hitherto published, both in England and America, confounding it with a creation of Dr. Bennett's some twenty years ago, and described by him in his well-known American work on fowls. This description is highly curious, and well illustrates our opening remarks on some American so-called "breeds." "I have given this name," he says, "to a very extra breed of fowls, which I produced by crossing a Cochin China cockerel with a hen that was herself a cross between the Fawn-coloured Dorking, the Great Malay, and the Wild India. Her weight is six pounds seven ounces. The Plymouth Rock fowl, then, is in reality one-half Cochin China, one-fourth Fawn-coloured Dorking, one-eighth Great Malay, and one-eighth Wild India. Their plumage is rich and variegated, the cocks usually *red and speckled*, and the pullets *darkish brown*. They are very fine fleshed, and early fit for the table. Their legs are very large, and usually blue or green, but occasionally yellow or white, generally having five toes upon each foot; some have the legs feathered, but this is not usual."

It is only necessary to read the above description to see that this *very extra* breed of fowls, which bred legs yellow, white, blue, *or* green, feathered or clean, five-toed or four-toed, could not possibly last long. It was *too* "extra" for this world, and even the inventor could not "run the machine" long, so complicated was it in its various parts. *This* Plymouth Rock, then, naturally and inevitably disappeared from simple disintegration of its heterogeneous materials, and though Dr. Bennett's old description has been copied by all poultry authors who have noticed the fowl at all up to the present date, this has arisen simply from ignorance, first of the fowl itself, and, secondly,

of the accounts given by its breeders and producers. So completely had the *old* Plymouth Rock disappeared, that in the first poultry journal ever published in America, *The New York Poultry Bulletin*, no notice whatever is taken of any fowl under that name during the first two years of its issue. The description in the American "Standard of Excellence," published in 1871, states the colour as "dark or light steel-grey" for the cocks, and "dark steel, mottled black and white, black and white bars well defined across each feather," for the hens. This is evidently intended to describe Dominique marking, and indeed the editor adds a remark in brackets that he considers it wrong, and that the plumage should be described "same as Dominiques;" but in any case it widely differs from Dr. Bennett's, and accordingly, by degrees, a totally different account of the origin of the breed begins to appear. The first authentic account we were able to obtain came to us in answer to a special inquiry, in a letter from Mr. W. Simpson, Jun., of West Farms, N.Y., dated August 12, 1871. In this letter he says of them, "If bred with care they will make a fine variety. They are an *improved Dominique*, being just like them except in comb and size; they have a single comb and are larger, as they have a touch of Asiatic in them." He adds, "They do not breed very straight yet." In another letter, dated April 26, 1873, enclosing the revised and corrected "Standard of Excellence" for the variety, which will be found at the end, and which, after careful study of the bird, we have also followed in our own Schedule for judging the fowl (no alteration being made further than to re-arrange the various points in the order adopted after full consideration throughout this work), the same gentlemen adds the following particulars, first premising that the "already printed Standard is very incorrect, particularly in colour of plumage and tail." He then proceeds as follows:—

"After a little careful breeding I think the Plymouth Rock will be a grand fowl, and second to none for all purposes. As yet they *do not breed quite true* always, and their eggs are all colours and sizes. They are handsome, good sitters, and good for table, and I intend myself to stick to them and try and get them right. They were produced from *single-combed Dominiques crossed with Asiatics*. Dominique fowls are the same in colour, and are a useful variety; but twenty years ago, when the Shanghaes made their appearance, these took their place in the estimation of the public, and the Dominiques were much neglected by fanciers, so that they do not breed any straighter now than the Plymouth Rocks."

In the *Pet Stock, Pigeon, and Poultry Bulletin* for March, 1873, is an article on the origin of the fowl, by the Rev. H. S. Ramsdell, from which we make the following extracts:—

"Our modern Plymouth Rock fowl is in no way whatever connected with the Plymouth Rock produced by Dr. Bennett some twenty-five years since, from a cross with the Asiatic fowls. None of this blood enters into the composition of the present stock. They are a different bird altogether, and were produced on the farm of the late Joseph Spaulding, of Putnam, Conn., which is situated about one mile from my own. I was intimately acquainted with Mr. S. while he lived, and I was thus given an opportunity of *knowing* the facts of which I speak.

"Some thirty years since, John Giles, Esq. (well known to the poultry world) introduced a fowl into this vicinity called the Black Java; its plumage was black and glossy, its size large (Mr. G. said the pullets had sometimes reached eleven pounds), they were an unusually hardy bird, with a dark, slate-coloured, smooth leg, and the bottom of the foot yellow. They proved good layers, and of extra quality for the table; not coarse, like most of the large-sized birds, but fine and juicy. I sold a few of these birds to a Mr. Thayer, of Pomfret, of whom Mr. George Clark, of Woodstock, Conn., purchased some—he supposed the same. Mr. Clark, passing Mr. Spaulding's yard one day, noticed his fine flock of Dominiques, and proposed bringing a few of his Javas over to cross with them, to increase the size. Mr. S. accepted the offer; and when the

chickens were grown rejected the black ones, and those with double comb, reserving to breed from only the single-comb birds which retained the Dominique colour or near it. They were usually of darker plumage than the Dominique, the legs sometimes resembled the Java—dark with yellow feet—but were mostly yellow, or yellow with a slight streak of dark on the front of the leg, which with the feet are free from feathers. We received some eggs of this cross from Mr. S. as a present, and purchased some fowls of him. Of the first produce, one hen weighed over eight pounds, and another reached nine pounds and three-quarters. We soon had a fine flock of them. The fowls were spread around the neighbourhood, and were much sought after, but had as yet no name. A gentleman asked me what I called them? Not knowing that any of Bennett's were now in existence—I had not seen any of them for years—I said, '*Plymouth Rock*.' The name passed from one to another, and they were soon generally known by that name. Our opinion of the fowl is, that when bred pure, as it came from the hands of Mr. Spaulding, it has few equals and less superiors. True, they will now and then throw a black chick, resembling those we had twenty-five or thirty years since, but we find they grow fewer each year, and doubtless will soon disappear altogether."

The Black Java fowl referred to in the above extract is evidently an Asiatic bird (either pure or cross-bred), containing a great deal of the Malay. We have made inquiries of other American sources; and while some affirm the Cochin cross to have been employed, *every* correspondent without exception states that one of the parents was the Dominique fowl. Our own strong opinion is, that the Dominique and also the Asiatic races being very common in America, *many* cases of crossing have occurred, and that thus the same fowl—half Asiatic and half Dominique—has probably been produced in various quarters, and not in any one alone; but however this may be, the facts of Dr. Bennett's birds being extinct, and that the modern fowl was originally a half-bred Dominique, are absolutely certain.

Only one or two importations of Plymouth Rocks have yet reached this country; one of which, sent over by Mr. W. Simpson, arrived in time for the Birmingham Show of November, 1872, and took honours in the "Any Variety" class. The variety, as now brought to something like perfection, almost precisely resembles a Cuckoo Cochin with smooth legs, but has a considerably larger tail, and a very full and prominent breast, derived from the Dominique ancestry. The head and comb are unmistakably Cochin. As regards the flesh, the Dominique seems to predominate, the fowl being juicy and good for the table. It is a moderate sitter, about equal to average Brahmas as regards frequency of incubation; grows fast, and is a capital layer. In all its economic qualities, in fact, it very closely resembles the Brahma, and even in its habits, being an active forager; but does not generally stay up nearly so late from roost. The colour being well adapted for wear, we must pronounce the Plymouth Rock a capital fowl, giving all the good qualities of the Cochin without its principal drawbacks, and likely to suit the many who desire a large noble-looking bird, but whose taste does not incline to the feathered legs and fluffy proportions of the Asiatics, and who dread the delicacy of the Dorking.

In breeding this fowl, as in all others of cuckoo colour, the chief point is to preserve the pure bluish-grey, and carefully to avoid pure white, black, or especially red feathers. Some little uncertainty in this respect will be found at first in all imported birds, but, by care in choosing breeding-stock from the progeny, may readily be checked, as no colour is easier to breed "true" than this Dominique marking, with a little judicious selection. The combs will require the same careful breeding, and the same precautions against premature showing, which we have already treated of in Cochins.

The hitherto published American "Standard of Excellence" we have already seen to be very

faulty as regards Plymouth Rocks; but by the kindness of Mr. W. Simpson we are enabled to give a correct revision of it, such as will be issued shortly, and may be depended on.

PLYMOUTH ROCKS.

COCK.—*Comb*—Single, medium size, perfectly straight and upright, with well-defined serrations, and free from side sprigs. *Beak*—Yellow, short, and stout at base, and tapering to the point. *Head*—Medium size, and carried well up. *Eye*—Large, bright, and very clear. *Ear-lobe*—Bright red. *Wattles*—Broad and full, well rounded on lower edge. *Neck*—Medium length, finely tapered, and well hackled. *Breast*—Very broad, deep and full. *Body*—Large, very square, and compactly built. *Back*—Very broad. *Wings*—Medium size, and carried well up; bow and tip covered by breast and saddle-feathers. *Tail*—Medium size, similar to Cochin. *Thighs*—Large and strong. *Legs*—Rather short, stout, and bony, well spread apart, perfectly free from feathers, and bright yellow in colour. *Feet*—Four-toed, stout, and strong. *Colour of Plumage*—Ground-colour ashy-grey, banded with black, the two colours shading into each other, the shafts of the feathers corresponding with the bands, the entire plumage evenly marked, and free from red, white, or black feathers. *Carriage and Appearance*—Very upright, noble, and grand.

HEN.—*Comb*—Same as cock, but small. *Beak, Head, Eye, Wattles, Ear-lobe, Neck, and Breast*—Same as cock. *Back*—Broad, the neck-feathers flowing well over the shoulders, saddle-feathers quite full. *Wings*—Same as cock. *Tail*—Small, carried upright, and rather pointed. *Thighs*—Large, and well covered with fluffy feathers. *Legs*—Toes, plumage, and carriage, same as cock.

POINTS IN PLYMOUTH ROCKS.

Size	25
Comb	10
Head	5
Tail	5
Colour of Plumage	25
Symmetry	20
Condition	10
	100

Of other breeds we can learn little that is definite, except that they are admittedly inferior to the foregoing. The *Danvers White* was a breed formed by crossing Buff Cochins with White Dorkings, and had a white body with bright yellow bare legs, which latter we have already remarked that American breeders seem very partial to. It had the reputation of being a good fowl for laying and hardiness, but is little known now, the White Leghorn having superseded it. The *Jersey Blues* resembled Andalusians in colour, and were described as having a Dorking-shaped body, but being much hardier. We have a strong suspicion that it may have been the Andalusian fowl itself; though some stray notices we have hunted up seem rather to denote a Malay character; the Malay indeed seems to have attained a general distribution and popularity in the States under various names, very different to the English estimate of this breed. The name is derived from New Jersey; indeed, we may remark that the local names of all American breeds, except Dominiques and Leghorns, are strong testimony to their local and ephemeral character. The "Bucks County" fowl, so far as we can make out, must have been very similar to, if not identical with, the Jersey Blue.

In framing a Schedule for judging American breeds, according to the form adopted by us after many trials and long consideration for the other portions of this work, we have felt in some difficulty, from the little practically known of them in this country. We have given the American Standards, as carefully revised by the best breeders; and it may justifiably be asked, why not let the matter there rest? Two reasons have operated against such a course. The first is, that we have adopted our own form, as just stated, from the fullest and most deliberate conviction, tested by rigorous trial, of its superiority; the second, that we have reason to know our opinions and

views are valued and respected by American brother fanciers, and that we have been, in point of fact, expressly asked to give our views as to a "Standard" for American breeds also, by those who from their official position may be assumed to represent in some sort American fanciers generally. Being, then, convinced that multiples of five, arranged to sum up a total of 100 points, *cannot* accurately represent good judging, we have done our best to frame a scale in our own way. This is not so difficult as might at first sight appear; since on the average of our scales certain general proportions may readily be traced; and moreover, breeds known to us, and similar in colour or other points, afford valuable materials for analysis by comparison. These we have accordingly carefully studied, also attentively weighing the value given to various points by Americans themselves in these breeds, as compared with those given to well-known breeds which we have already treated. Thus, partly from observation of the fowls themselves, of which we can at least say what no previous English writer can, that we have *actually seen and studied carefully all the varieties;* partly from analogy, or the consideration of what breeds they must from their general resemblance be judged generally in accordance with; and partly from the study and analysis of the American scales themselves, we believe the following will be found fairly accurate, and that even our American friends will on trial be convinced of the superiority in quickness, accuracy, and definiteness of *application* (which, and not an apparently symmetrical proportion, should be the real test of the value of a scale) of the Schedules here given. If not, no harm can arise, since their own scales have already been given for use if preferred.

SCHEDULE FOR JUDGING LEGHORNS.

General Characteristics of Cock.—*Head and Neck*—General appearance of head resembling Spanish. Beak rather long and stout, but not heavy; comb very large, single, perfectly straight and upright, of a handsome outside arch or curve, with serrations symmetrically formed and disposed, and free from excrescences; wattles long, thin, and fine in texture; face fine in texture, and nearly free from feathers; deaf-ears well-developed and pendent, but not excessively so; thin, smooth, free from folds, and close to the head; neck long, well furnished with hackles, and carried upright. *Body*—General appearance light and active, large at shoulders, and tapering towards the tail; back rather round, and slanting to the tail; wings large, but tightly carried; breast full, round, and carried forward. *Legs and Feet*—Legs and thighs rather long; shanks slender, perfectly free from feathers; hocks clear; toes thin and well spread. *Tail*—Large, with full and sweeping sickles, carried high. [Some American breeders consider the tail should be upright, or even squirrel fashion; but we consider this spoils the fowl completely.] *Size*—Medium, averaging about six to seven pounds. *General Shape*—Rather light and slender, otherwise like Spanish. *Carriage*—Very alert and sprightly.

General Characteristics of Hen.—In all respects resembling those of the cock, with the usual sexual differences, excepting that her comb falls over to one side, hiding one side of the face.

Colour of White Leghorns.—*In both Sexes*—Beak a bright yellow. Comb, face, and wattles, brilliant scarlet red. Deaf-ears pure soft white, resembling white kid. Eyes red or pearl (red preferable, being a better constitution, and brighter looking). Legs a brilliant yellow. Plumage all over a pure and perfect white, the straw-colour allowed in the cock by the American Standard being very objectionable.

Colour of Brown Leghorns.—*In both Sexes*—Beak, comb, face, wattles, deaf-ears, and shanks as in White Leghorns. Eyes bright red. *Colour of Cock*—Head and hackle rich red, which may be striped with black towards the bottom. Back, shoulder-coverts, and wing-bow deep violet or crimson-red, occasionally with a shade of orange. Wing-coverts a rich green black, forming a bar across the wing. Primaries black, with a bay edging to lower web. Secondaries deep bay on outer web, which is all that appears when wing is closed, and black on inner web; end of every feather black, forming a black edge to corner of the wing on upper side. Saddle red, ranging from bright red to rich deep red, with black stripes in the feathers—these not imperative. (See our previous opinion on this point.) Breast and under-parts rich deep black, free from brown splashes. Tail black, glossed with green or purple; coverts black edged with brown. *Colour of Hen*—Hackle rich golden yellow striped with black, but not quite solidly. Breast a salmon-red in upper part, running off into a brownish ashy colour at the thighs. Rest of plumage a rich brown partridge-marking, or light brown covered over with minute dark marking, except the true tail-feathers, which are black. (The nearer the whole colour of the hen to the proper exhibition-colour of Black-red Game the better.)

Colour of Dominique Leghorns.—*In both Sexes*—Beak, comb, face, wattles, deaf-ears, eyes, and shanks same as in Brown Leghorns. Colour all over a ground of bluish-grey, each feather barred or pencilled across with bands of darker bluish-grey, approaching black. To be free from pure black, white, red, or golden feathers.

VALUE OF DEFECTS IN JUDGING LEGHORNS.

Standard of Perfection.		*Defects to be Deducted.*	
A bird perfect in shape, style, colour, &c., and in perfect health and condition, to count in points	100	Bad shaped comb	12
		Ear-lobe folded, wrinkled, or duplicated	8
		Stain of red on ear-lobe	15
		Want of hackle	6
		Squirrel-tail	12
		Faults in colour	18
		Want of size	15
		,, symmetry	20
		,, condition	15

DISQUALIFICATIONS.—Cock's comb twisted or falling over, or hen's erect; ear-lobe entirely red; legs any colour but yellow; coloured feathers in Whites, or white feathers in Brown Leghorns; wry-tails, or any bodily deformity; any fraudulent dyeing, dressing, or trimming.

SCHEDULE FOR JUDGING DOMINIQUES.

GENERAL CHARACTERISTICS OF COCK.—*Head and Neck*—General appearance of head plain and neat, to be free from coarseness. Beak medium size; comb double or rose, wide in front, and tapering into a long spike pointing backwards and slightly upwards behind; to be flat on top, full of "work" or points, and set firmly and upright on the head; wattles medium length, fine, and neatly rounded; deaf-ears medium-size, and pendulous; face as fine in texture as possible; neck medium length, and very full in the hackle, which should flow very widely over the shoulders. *Body*—General appearance plump and square. Back broad; wings medium-size, and neatly carried; breast very full and prominent. *Legs and Feet*—Thighs and legs very short; the shanks rather slender, free from feather, and clear at the hocks; toes straight and well-proportioned. *Tail*—Large, with fine sweeping sickles, carried rather high, but not squirrel-fashion or over the back. *Size*—Medium, averaging about seven to eight pounds. *General Shape*—Neat and compact. *Carriage*—Lively and spirited, but unobtrusive.

GENERAL CHARACTERISTICS OF HEN.—In all respects, allowing for sex, resembling those of the cock. Average weight about six pounds.

COLOUR OF DOMINIQUES.—*In both Sexes*—Beak bright yellow. Comb, face, deaf-ears, and wattles brilliant red. Eyes red or yellow. Shanks brilliant yellow. Plumage a bluish-grey ground, each feather barred or pencilled across with bands of dark blue-grey, ranging to almost black; a medium shade, giving an effect of darkish blue-grey, preferred. To be free from white, black, or red feathers.

VALUE OF DEFECTS IN JUDGING.

Standard of Perfection.		*Defects to be Deducted.*	
A bird perfect in shape, style, colour, &c., and in perfect health and condition, to count in points	100	Coarse head	8
		Faulty comb	12
		Bad colour	15
		Crooked breast	10
		Want of size	20
		,, symmetry	15
		,, condition	15

DISQUALIFICATIONS.—Single combs; legs feathered, or any other colour than yellow; red, black, or white feathers in plumage; any bodily deformity; any fraudulent dyeing, dressing, or trimming; birds not a fair match in the pen (the plumage in this coloured fowl being similar in both sexes).

SCHEDULE FOR JUDGING PLYMOUTH ROCKS.

GENERAL CHARACTERISTICS OF COCK.—*Head and Neck*—General appearance of head resembling a Cochin. Beak short, and stout at base, somewhat resembling a parrot's bill; comb single, upright, medium-sized, and neatly arched, perfectly straight, free from excrescences, fine in texture, and symmetrically notched or serrated; wattles rather long, thin, neatly rounded, and fine in texture; deaf-ears well developed and pendent; neck rather short, well-arched, and very full of hackle, causing it to appear very wide at the shoulders, and tapering to the head. *Body*—General appearance large and deep. Back broad and short; saddle

very broad, with a gradual rise to the tail, as in Cochins; wings medium-sized, and neatly carried, well buried in the body-feathering; breast very deep, broad, and full: the Cochin breast to be avoided. *Legs and Feet*—Thighs large and strong, well furnished, but not fluffy; shanks rather short, very thick, and set on wide apart, to be perfectly free from feathers; toes large, straight, and well spread out. *Tail*—Rather small, but larger than Cochins; furnished with true sickles, but smaller than usual. *Size*—Very large, ranging from nine pounds to twelve pounds in cocks, and eight pounds to eleven pounds in cockerels. *General Shape*—Massive, but compact. *Carriage*—Upright and commanding.

GENERAL CHARACTERISTICS OF HEN.—*Head and Neck*—Resembling the cock's, with the usual differences. *Body*—Somewhat more plump and square than the cock's. *Legs and Feet*—Similar. *Tail*—Rather small, and rising almost upright out of a rising saddle. *Size*—Averaging say seven to eight pounds. *General Shape*—Square and massive, yet neat. *Carriage*—Very plain and matronly, with a dignified air.

COLOUR OF PLYMOUTH ROCKS.—Beak a bright yellow. Comb, face, deaf-ears, and wattles a brilliant scarlet red. Shanks bright yellow. Plumage same as Dominiques, a bluish-grey ground, pencilled or barred across the feathers with bands of dark bluish-grey, verging to black.

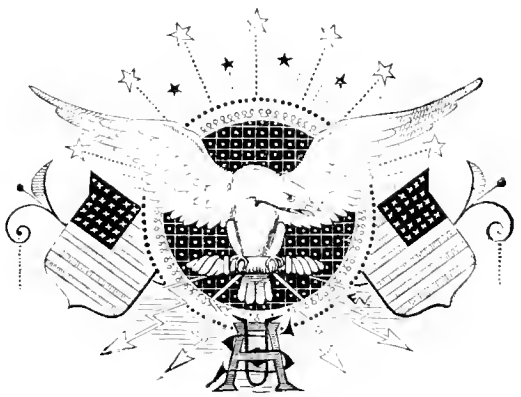
VALUE OF DEFECTS IN JUDGING.

Standard of Perfection.	
A bird perfect in shape, style, colour, &c., and in perfect health and condition, to count in points	100
If of extraordinary size, add on that account*	5

* See Note to Scale for Cochins, page 238.

Defects to be Deducted.	
Bad head and comb	12
Want of hackle	6
Bad shape or carriage of tail	6
Primaries out of order	15
Curved toes	7
White in deaf-ear	6
Faults of plumage	15
Want of size	20
,, symmetry	15
,, condition	15
,, ,, (if total)	35

DISQUALIFICATIONS.—Legs feathered, or any colour but yellow. Rose-combs. Red, white, or black feathers. Wry-tails, or any other deformity. Birds not matching in pen. Any fraudulent dyeing, dressing, or trimming.



CHAPTER XXVIII.

UNCLASSED VARIETIES OF POULTRY.

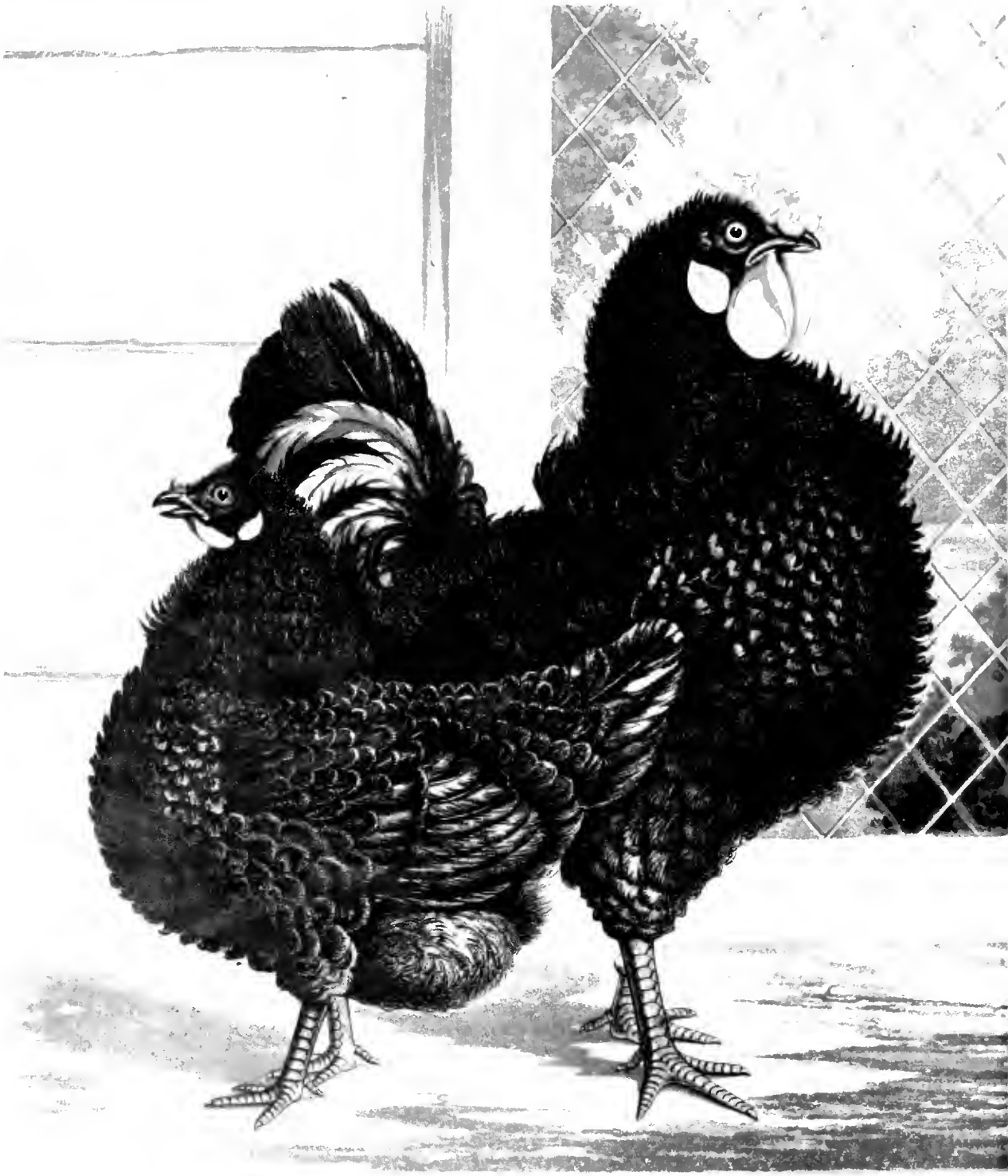
AT nearly all poultry-shows of any standing, there is, in addition to the classes for the recognised standard breeds, one for "Any Other New or Distinct Variety." Many of the fowls already treated of usually appear in it, and many more *did* appear in it before they had won their right to have classes of their own. Brahmas first made their *début* in this class; so did French fowls; and so do all new breeds, such as those treated of in our last chapter, which have every one (except the Brown Leghorn, which has not been shown in England up to the time we write) won prizes in this class. Cuckoo Cochins, Andalusians, Minorcas, and in general all the less known and little-prized colours of even standard breeds, have to content themselves with this "refuge for the destitute;" but, besides these and such as these, there are several varieties more or less marked, which cannot be classed under any of the great races. Some of these are well known, appearing at nearly every show; others are more seldom seen: but all have special characteristics more or less marked, some of them, indeed, possessing points the most peculiar and characteristic of any. Such unclassed varieties, so far as known to us, we propose to consider in the present chapter.

DUMPIES.—This breed, also called Bakies, Go-laighs, and some other local names, was formerly rather a favourite in Scotland. The peculiarity of the fowl is the *extreme* shortness of the shanks, often not exceeding an inch and a half. The breed appears to us to be rapidly dying out, and Mr. T. Raines, of Stirling, writes us to the same effect, saying that "they are scarcely ever seen now, though I know one or two parties that have them. They are," he continues, "very profitable birds, and very good for table, having, in spite of their very short legs, a large body. They have a fine single upright comb, a rather large tail with good sickles; and the colour much resembles that of the Scotch Grey, only the cock is rather lighter in colour."

We have only seen two pens of these birds for several years, both of which were very poor. In one case there were evident traces of feather on the legs, and in both the colour was more of a common brown speckle than the colour described by Mr. Raines, which is that of the Dominique or other Cuckoo fowls.

The weight of the Dumpy hen should be about six pounds. It will be a pity should the breed become extinct, since its short legs and plump body, with its hardy constitution, give it evident value, even as a cross with more stilty breeds.

FRIZZLED FOWLS.—These fowls are properly called by the name here given, which graphically describes the appearance of the plumage; the name of "Friesland" fowls which is often applied to them having no foundation whatever beyond the ridiculous attempt to put the proper nomenclature into a more "genteel" form. If any local name at all be given, that suggested by Mr. Tollemache would have decidedly the best claim, though the Frizzled fowl is found in nearly every part of the world.



In the course of many years experience in breeding, and intercourse with other amateurs, we have frequently met with birds, of all the Asiatic races especially, in which the neck-hackles had a tendency to twist out of the true sweeping line, towards the back of the neck; a defect well known among Cochin breeders, and less so among Brahma fanciers, as a "twisted hackle." The causes of this defect have usually appeared to us to consist chiefly in either breeding from young birds on both sides, or the exclusive use of too dry a food, such as oatmeal unmixed. However this may be, the fault has a strong disposition to be hereditary; and the tendency to it is very plainly the same which, exaggerated and developed, produces the Frizzled fowl. Indeed, by selecting specimens with such twisted hackles, and breeding them together, birds partially frizzled would almost certainly be produced.

Frizzled fowls occasionally vary in other characteristics, though usually presenting neat rose-combs and short dark legs. The peculiarity is in the plumage; every feather being curled back in the wrong direction, as if the bird had been roughly stroked the wrong way, and presenting a most grotesque appearance. The tail-feathers are not, of course, thus re-curved, but the webs are loose and disconnected. The most usual colour shown in this country is white, but we have seen very handsome brown or rather partridge-coloured specimens, and also black. The last colour is to our fancy the handsomest of all, and we have accordingly selected it for illustration in the plate, which renders the birds to the life; all previous illustrations of this breed which we have seen being the merest caricatures.

Frizzled fowls have the general reputation of being delicate and rather susceptible to cold or wet. Mr. Hewitt endorses this opinion, which would seem reasonable in itself, from the loose and unprotective character of the plumage; but it is singular that most people who have actually kept and bred the fowl for any length of time are of a different opinion, as are persons who reside where it is indigenous. Mrs. Taylor, of Ardgillan Castle, Balbriggan, Ireland, who has kept this breed for many years, has kindly sent the following:—

"I have kept White Frizzled fowls now for seven or eight years, and think them a most useful and profitable variety. They are always the *first to lay* in the autumn, which I attribute to their early moulting—my poultry-woman writes me from home that they are all featherless already (June 10th). They are also excellent mothers, and from their feathers being nothing but fluff, they always seem to keep their eggs warmer than other hens when sitting.

"They have a very marked power to reproduce their peculiarities—the turned-back feather and rose-comb—even when several times crossed with other breeds. I have also remarked that although the parent birds in my pure-bred runs are all white, a jet-black chicken has often been produced; which fact, and the observations of Captain Tollemache in the Mauritius, lead me to believe that the Black is not an original variety.

"The first I ever possessed came from a farmer in Westmeath, and at that time they were common both in that county and in Cavan. I have since tried to obtain some from that locality, but they are nearly extinct, and I could not meet with any true-bred specimens. My first birds were not pure white, but each feather had a very delicate pencilling of grey, which Captain Tollemache states is the general colour of the Mozambique fowl in the Mauritius. By always selecting the whitest birds, my stock is now pure white, but a black chick still occasionally appears.

"I consider them the most valuable fowls I possess. They are excellent for the table, and even a hen two years old gives very white meat, and much more tender than that of any other variety. The smallness of their bones also makes them desirable for the table. They seldom or never want to sit, and are, to my taste, very ornamental. They are very hardy, and the chicks

easily reared. They are slow in feathering, and therefore require to run long with the hen, but, on the other hand, there is no harbour for vermin."

Mr. Eugene Tollemache, late captain in the 22nd Foot, and who was quartered at the Mauritius with that regiment from 1865 to 1867, adds the following, which will explain the reference to him by the writer of the above :—

"The *Hurricane Fowls*, as they are there called, are very common in the Mauritius, especially in the hut camps of the Malabars. The name arose from the happy idea of their progenitors being caught in a hurricane, and so having their feathers all blown the wrong way. They are natives of that part of the African coast opposite Madagascar, hence I should say the proper name would be the Mozambique fowl. Their colour is generally brown, but I have seen them in much brighter colours, each feather being barred with brown and yellow, giving the appearance of shot silk. I never saw them white. I have bred them myself, but am sorry to say that I did not then observe their habits and peculiarities very closely. I can, however, say that they were very good layers, laying a nice egg, and also very good eating. They are also very careful and excellent bringers-up of a young family."

Temminck states that the Frizzled fowl is found throughout Southern Asia, Java, Sumatra, and the Philippines. It is also common in Ceylon (where it is said, however, to have been brought from Batavia), and we have heard of it in the West Indies, to which it is scarcely likely to have been exported. In some old descriptions it is evidently confounded with the Silky fowl, with which it has, however, no connection whatever, the two breeds being quite different and distinct, as may be seen at a glance by comparing the two plates.

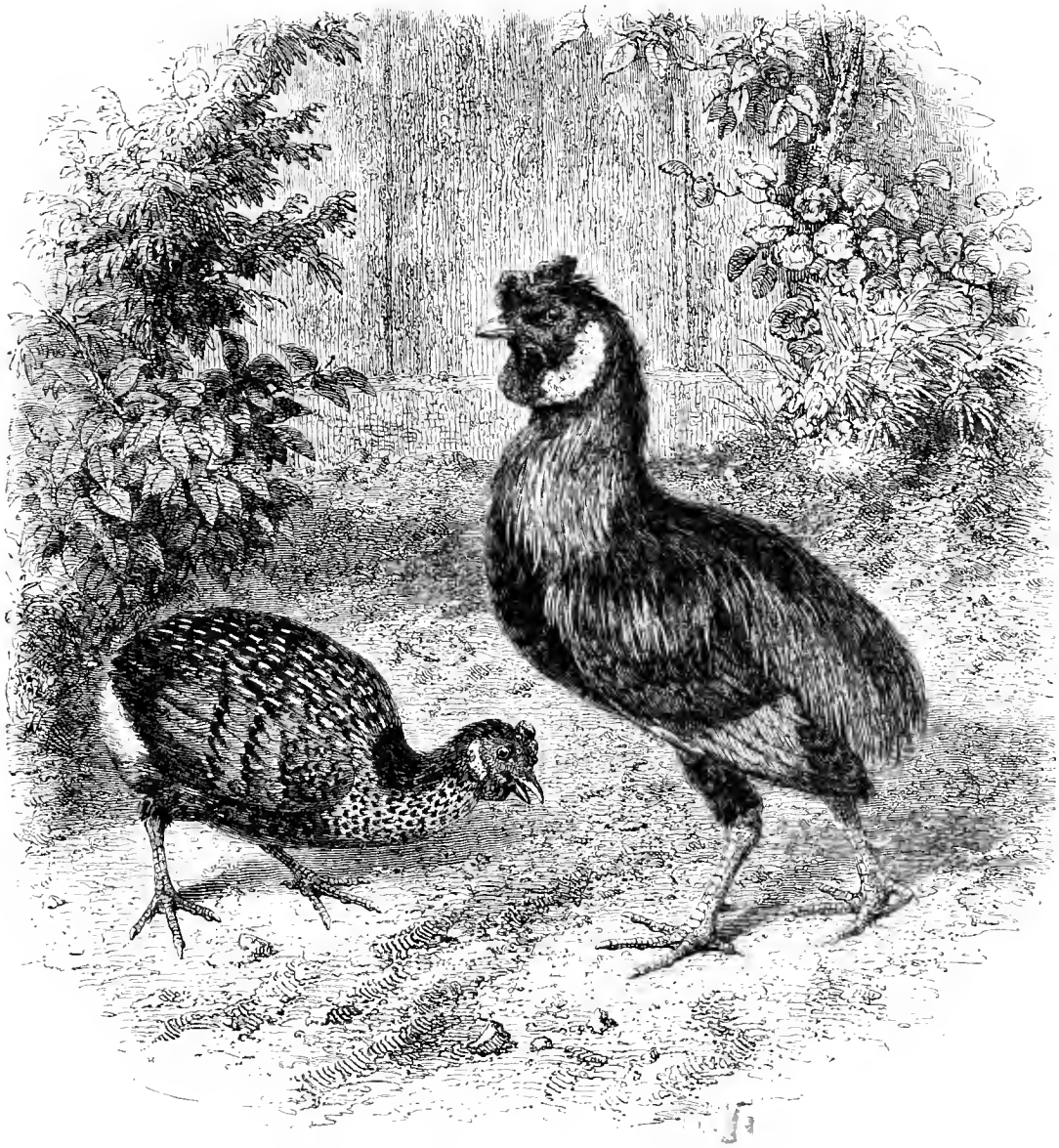
We have heard Frizzled fowls called ugly, but cannot ourselves join in such a verdict. We have seen ugly specimens certainly, not only frizzled, but "ragged," which the fowl should by no means be. Birds on which every feather is properly and *neatly* curled, however, though singular enough in appearance, have a beauty of their own, which will we think be admitted even on the strength of Mr. Ludlow's very faithful representation.

In breeding these fowls perfection and neatness in the frizzled plumage must of course be the chief point in choosing stock birds, colour being preserved or modified in the ordinary way.

PTARMIGANS.—It is almost certain that these fowls, rather commonly shown some years ago, but scarcely ever seen now, were degenerate descendants from some former importation of Sultans. Like them, they were pure white, crested, bearded, feather-legged, and vulture-hocked; but, unlike them, stood remarkably high on the leg, which gave them a different carriage and appearance altogether. They were small in body—if anything, rather smaller than Sultans—and very delicate in constitution. It is probably to this cause their disappearance—for we have not seen any ourselves for several years now—is due. Our description of Sultans, with the differences we have pointed out, will serve all purposes for these fowls.

RUMPLESS FOWLS.—A race of fowls without tails, and which breeds thus with great certainty, has been known for some hundreds of years. Messrs. Wingfield and Johnson's original edition of the "Poultry Book," published in 1853, gives the following excellent summary of the accounts by the older naturalists :—

"This is the *Gallus ecaudatus*, or Tailless Fowl, of the naturalist Temminck, and the *Gallina caudâ seu uropygio carens*, or Fowl without a Tail or Rump, of Linnæus. It is the *Rumpless* or *Persian Cock* of Latham, and the *Rumpkin* of others. This variety was known to Aldrovandus two centuries and a half ago, and he calls it the Persian fowl. His specimens only appear to have



WALLIKIKI FOWLS IN THE PARIS ZOOLOGICAL GARDENS.

differed from those which we have seen in having a black plumage variously marked with yellow. Sonini and Temminck state that it is a native of the Ceylon forests, and is called by the natives *Wallikikilli*, or Cock of the Woods. This however is denied by Mr. E. L. Layard, brother of the explorer of Nineveh. Writing from Ceylon in 1850, he says, 'The Rumpless fowl is not a wild inhabitant of this island, in spite of Temminck. It is a rather rare tame introduction from China, I am told. It may appear like boasting, but I can confidently say I am more acquainted with the Ceylon fauna than any man living, and that if the bird had existed wild I must have seen it. *Wallikikilli* is the name for the female of *Gallus Stanleyi*, meaning literally, *Walli*, "jungle," and *kikilli*, "hen." The name of the Rumpkin is *Choci-kukullo*, literally Cochin fowls' (*Gardeners' Chronicle*, 1851, page 619). The Rev. J. Clayton, in the Philosophical Transactions for 1693, page 992, says that he observed in Virginia that the hens and cocks were for the most part without tails; adding that he was assured that our English hens after some time lose their rumps. Buffon inconsiderately accepted this as truth, and even Dr. Latham seems not to have felt certain of its being untrue."

The illustration on the preceding leaf represents a pair of Rumpless birds which were exhibited, under the name of Wallikiki fowls (evidently a corruption of the Ceylon word mentioned above), at the Zoological Gardens of Paris some years ago.

We have seen in the chapter on Polish fowls that Mr. Hewitt found a hen which was deficient in a toe perpetuate this physical peculiarity in all her progeny without exception, exactly like the occasional examples met with in the human race of six-fingered families. There can be hardly any doubt that Rumpless fowls originated in a similar way; but it is somewhat strange that this should not only have been the case in widely-separated regions of the earth, but that certain localities should have become marked for the abundance of fowls thus singularly distinguished. Absurd as Mr. Clayton's tale was of English fowls losing their appendages after a while, there is no reason whatever to doubt that he was correct in his account so far as regarded the mere abundance of rumpless fowls in Virginia, and we met ourselves very recently with strikingly similar testimony; for returning from the Crystal Palace Poultry Show of 1872, in company with a West Indian gentleman who had been down to see it, he informed us that the greater number of the fowls in his neighbourhood had no tails. The tailless feline race of the Isle of Man is well known, and furnishes a strikingly analagous case in point.*

Rumpless fowls are not only destitute of tail-feathers, but it is found on plucking that the caudal projection irreverently denominated by many carvers "the parson's nose," and from which the tail grows, is utterly wanting; while on still further investigation by dissection it is discovered that even the spine itself is deficient in the final vertebræ. These peculiarities have become so strongly fixed by long descent, that a Rumpless fowl crossed with any other almost always produces a vast majority of Rumpless chickens. Hence, given a purely-bred Rumpless fowl, and it is easy to establish a Rumpless breed of *any* character which may be desired; and by this means Rumpless Polish, Rumpless Bantams, &c., have been produced. These cross-bred birds, however, are far less certain to reproduce their kind.

The true Rumpless fowl itself, however, does not appear to have any fixed type beyond the peculiarity from which it takes its name. Both rose and single combs are met with, and all colours. The size is generally rather small, averaging perhaps some five pounds in the cocks and four pounds in the hens, but still smaller are very common. The cocks possess true hackles both in neck and

* The many reports from various sources, not easily explained or laughed away, of a race of *tailed men* in Borneo, furnish an example analogous by contrariety, which may suggest some curious reflections.

saddle, the saddle-feathers in both sexes being curled over downwards, giving a most peculiar appearance. Owing to this peculiar formation of the saddle, the eggs of the Rumpless fowls are frequently unprolific, but by "moulting" some of the saddle-feathers of the hen this drawback can be removed, and the produce will be found as satisfactory as usual. As a rule the birds are hardy.

Aldrovandus describes the Rumpless fowl as black; at present, while all colours are met with, the most usual seems to be a brown or red; but whatever the colour be, the birds rarely breed true in this respect, except in the case of the black or white. The best collection of these fowls we ever saw was at the Birmingham Show of 1871, when four pairs were shown by one exhibitor. Each pair (cock and hen) was nicely matched, but every pair was of a different colour to the others. These birds were small, averaging we should say about four pounds and three pounds each.

The handsomest Rumpless fowls ever seen in England were exhibited by Mr Henry Higgs, of Lewes, under the name of *Gondooks*, at the Birmingham Show many years back. They were purchased by Miss Bush, of Clifton, and from this lady, now Mrs. Coathupe, we have obtained the following notes of these birds:—

"They were most handsome fowls, being a shiny black, quite rumpless, with a metallic lustre running through their feathers, especially those of the cock bird. They had top-knots on their heads, and very short legs, heavily feathered. I only purchased them of Mr. Higgs in October, when they were the greatest beauties, and the cock such a spirited bird; but to my great regret he was taken suddenly ill in February, and died. Neither of the hens had laid during that time. I tried in vain to procure another cock, but was told the breed was quite extinct in Turkey, whence I believe they were imported. After this misfortune the two hens were mated with a Golden Poland cock, and they laid well and their offspring were rumpless; but of course nothing like what the pure breed would have been. The two hens were remarkably healthy, and lived on for years."

Mr. Hewitt has kindly given the following description of these remarkable fowls, which he states to have made an indelible impression upon his mind:—"They were," he says, "small fowls, not larger than a Pencilled Hamburgh, but thoroughly black; Dorking-toed, black-legged, booted, falcon-hocked, rumpless, crested like Crêves, and bearded. These fowls stood as upright as the Penguin duck, in fact as erect as a hawk, yet were *singularly* lively in their motions, and though strictly rumpless, were as opposed in their gait to all other rumpless fowls as could well be imagined. It was their *constant* restlessness, combined with remarkably iridescent plumage, that marked them as being one of the most distinct varieties of poultry I ever saw. I have not any doubt, could three like them be shown nowadays, they would quickly be claimed at almost any price." It is to be regretted this breed is lost. White Gondooks are said to have been imported; but it is more than doubtful if they possessed the peculiar points of the birds above described.

Rumpless fowls are always stared at, but rarely take prizes. We are much inclined to think that a Rumpless Black Bantam, which could easily be produced, would have the best chance of acceptance at exhibitions. This and any other variety of the fowl can be bred with such facility that the only reason which can be given for their want of popularity is the very simple one, that fowls look much better *with* a tail than *without* one.

RUSSIAN FOWLS.—The origin of the name given to the fowls thus designated is somewhat of a mystery, unless on the hypothesis suggested by an ingenious writer long ago, that as from time immemorial every dog with a rough shaggy coat which could not claim any *other* name was called "Russian," so was every bearded fowl which, for want of crest, could not be called Polish.

This breed used to be kept in Scotland, but we are not aware of any having been shown in this country for some years. The originals, so far from being Russian, appear to have been imported by Mr. Vivian from *Bengal*. The characteristics were a full beard under the chin, and tufts of feathers on each jaw, but unaccompanied with crest. Mr. Vivian's birds were chiefly buff, but white, black, and spangled specimens were also seen. The fowl was of medium size (cocks weighing about six pounds) and had the reputation of being hardy, a good layer, and small eater.

We have some reason to believe specimens of this breed still exist in Scotland; but it is so long since any were shown that we should merely have mentioned the name, were not a black variety of the breed still preserved in America, and apparently valued. From the American *Poultry World* of November, 1872, we take the following descriptive account of these American black "Russian" fowls:—

"This rare breed has a rather obscure history. Their first introduction into America seems to have been at two periods: that of earliest date being into New Orleans, whence they spread northward as far as Iowa; and later importations being into Connecticut, about 1850, by Captain Kellogg, of Mystic. Lately another lot has been imported into Ledyard. Mr. Kellogg's importation is still represented by a few individuals in the vicinity of Mystic; and Mr. W. H. Brackett, of Boston, showed specimens from the same at the Massachusetts Poultry Association Fair last February, and took a prize.

"They are black, with a vivid glossy green, although the cocks were originally red on the neck-hackle, but this appears to have been bred out. The bottoms of the feet are yellow, and sometimes the dark legs are nearly of the same colour. They have rose-combs, less acceptably single, and both sexes are heavily muffed. The flesh is yellow. They are round and compact in form, and not badly shaped. Cocks will, late in the fall, reach seven pounds—ten pounds has been reported—pullets about five. They appear to have useful economical qualities, prodigious reports having been made of their laying qualities, cases being reported where 200 eggs per year were produced. Probably such a high rate, if correct, was the result of recent importation, which seems to often act as a stimulus. The egg is rather small. Their flesh is excellent. They make good sitters and mothers; and the chickens are hardy, and mature early. It is reported that a cross between a cock of this species and a Light Brahma hen produced pullets laying at four and a half months of age. There can be no doubt that this race will prove to be a very valuable addition to existing ones, especially if other importations are made to infuse fresh blood."

The description here quoted is accompanied by an engraving, very poorly executed, from which it would appear that the general conformation of the hen is much like that of the Crêvecœur, but the cock seems to stand higher, more in the attitude of a Brahma. It is quite evident that the race is the same originally as that alluded to in old English descriptions, and has been kept pure; while, if the above account can be trusted, it would certainly appear to be both useful and ornamental, and well worth a trial.

We may remark that a beard, without crest, is very easy of production. Dark Brahmas are peculiarly apt to produce pullets with a very perceptible beard, and we have seen birds in which this feature was pretty conspicuous. By selecting these, in three years a Brahma might be produced with a beard as large as could be desired. We also, some years ago, while residing in Bristol, came into the possession of two fowls of a very remarkable character, which took our fancy as we passed an ordinary bird-dealer's window. He called them "French Dorkings," and stated that they had been sold him by a gentleman who was giving up his fowls, and who had brought them from France; a statement we found was perfectly correct. They were really fine and good Dorking hens in all points, with single combs, and five toes (the fifth as perfect as we ever saw) on

each foot, but had each *tremendous* muffs and beards, but no sign of crest. The colour of one was the orthodox dark marking, or nearly so, and of the other, the old-fashioned "red-speckle;" the size large and fine, each bird weighing nearly eight pounds. The cock had been killed, and the efforts we then made failed in getting another, so that nothing came of the speculation. These birds were very moderate layers, but the eggs were very large; they however appeared aged, so that no sound opinion as to their real laying qualities could be formed.

SCOTCH GREYS.—This is a very useful breed of fowls, closely resembling the American Dominique in shape and plumage, and, in fact, only differing from it in having an upright single comb instead of rose, and pinky-white instead of yellow legs. It is hardly so good a layer, perhaps, as the American fowl, but very satisfactory and hardy. The average weights may be taken as about seven to eight pounds for the cocks and six pounds for the hens.

Mr. T. Raines, of Stirling, a well-known Scotch fancier, writes as follows of this breed:—

"Scotch Greys are very profitable and hardy birds. They are chiefly bred in the upper part of Lanarkshire, where they are great favourites. They have a straight single comb, red ear-lobes, and are of a well-dappled grey colour, with rather a light ground. I have found a great many very mossy, not distinct enough in the mottle; we also find them with brassy hackles, which is very much against them. They should have a good tail, the same colour as the body; but a great many are shown with white feathers, which is not generally considered a disqualification if other points are good. The legs are of rather a dark slaty colour, and the mottle can be plainly seen in the upper part of the leg in a well-bred bird."

The feathers of the Scotch Grey may be seen exactly represented in the engravings of the Dominique feathers at page 433, and the same remarks as are there given will apply as to breeding the birds free from those faults of plumage which Mr. Raines alludes to. The breed is often called the "Scotch Dorking," resembling the Cuckoo Dorking in all but the fifth toe. Some English judges do not, in fact, seem aware of the difference; for at the Birmingham Show on one occasion we remember seeing a prize in a class for "any other variety of Dorkings" (than Coloured or Silver-Grey) awarded to a pen of Scotch Greys.

This fowl, like the Cuckoo Dorking and the Dominique, can be thoroughly recommended as a most useful one; laying, sitting, and eating being all good. Were it more largely bred, it might be improved in size and beauty with very little trouble. Many shows in Scotland have a class for this breed, and we should be glad to see it sufficiently cultivated to claim the same right in more southern localities.

SILKY FOWLS.—The peculiar appearance of the Silky fowl would naturally attract attention from a very early date, and we accordingly find various old naturalists, besides our never-failing Aldrovandus, who describe fowls which, instead of feathers, are covered with wool, or, as others express it, "with hair like cats." Later on these accounts were thought fictitious, and Willoughby and Ray expressly declare them to be unworthy of credence; but it is somewhat singular to remark how many of the so-called "incredible" tales of old travellers and naturalists have been vindicated by a little *more* knowledge from the supercilious aspersions of even the most learned men, who have taken upon them to reject all alleged facts which did not fall within their own limited experience, or were contrary to their pet theories. Such a remark may have its moral even in the present day.

Yet truly the Silky is a strange fowl. The soft and flossy appearance of the plumage, which fully justifies the old descriptions which have come down to us, are not the only points of difference.

The skin itself is "uncanny," being of a deep violet colour, almost black, and the surface of the bones is the same, making the bird rather a queer-looking dish to partake of, though excellent eating to those who can carry out the maxim, "Handsome is that handsome does." As Mr. Layard writes from Ceylon, "On table it is a revolting-looking dish. But taste it!" The comb, face, and wattles are of a deep bluish or livid colour—the comb being more of a dark purple, while the deaf-ears are a brighter blue; and the legs—five-toed and feathered, but not vulture-hocked—are also of a deep bluish-black. With the exception of the white plumage, there is a "very black look about it altogether."

The nature and cause of the silky plumage can best be shown by Fig. 95, which is a magnified representation of a portion of an *ordinary* feather. It will be seen that from the stem proceed strong and elastic fibres, which form the vane of the feather, and which are furnished on each side with minute fibrils. On one side of each fibre these fibrils are branched, and bent downwards, while on the other side they are single, and bent upwards. The two sets thus interlace and hold each other when the main fibres are in position; and this is the reason why the vane of a feather, though its fibres be separated, reunites if "smoothed" with the fingers, as every one

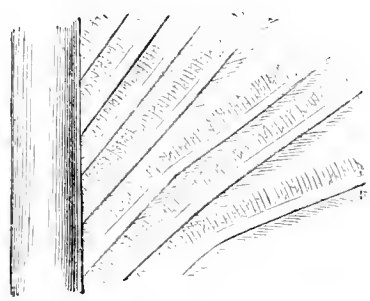


Fig. 95.

knows. The feather of the Silky fowl differs from this arrangement in several respects. In the first place, both the stem and the fibres which proceed from it are very thin, weak, and non-elastic, so that the fibres have no tendency to assume a position opposite each other, but hang about in a lax and indetermined manner; and, secondly, the fibrils are also very weak and thin, besides being so sparse that they can be seen and counted with the naked eye or a very low magnifier; while in an ordinary feather many hundreds occupy the length of one inch. The fibrils of the Silky also extend from the main fibres at nearly equal angles, being thus destitute of that interlocking power we have just described. The consequence of these variations in structure is the loose and flossy character represented in Fig. 96, which shows very accurately feathers from the hackle of a Silky cock and the body of a Silky hen, with which we have been kindly furnished by Mr. R. S. S. Woodgate.

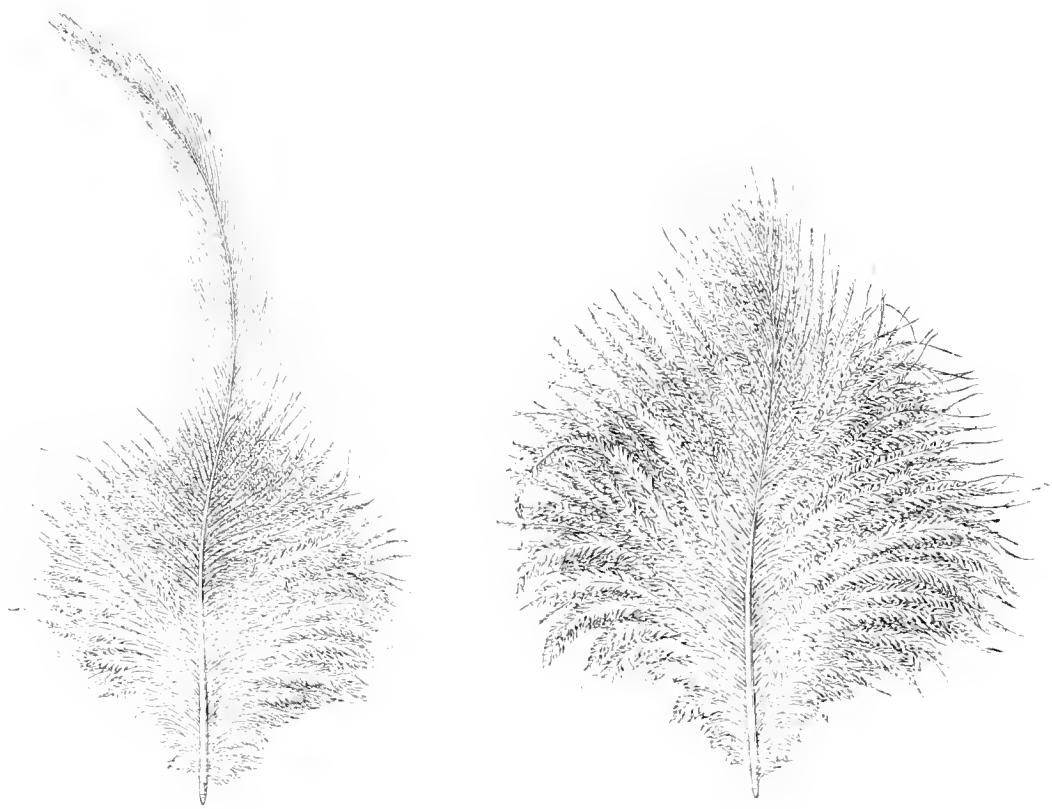
The Silky fowl is generally said to be a native of India; but Mr. Blyth, Curator of the Asiatic Society's Museum at Calcutta, stated that the only specimens he had seen "were from China, Malacca, or Singapore." Some had single combs, and in these the colour of the combs more resembled the ordinary red of other fowls; while the others had double black combs.* These differences are met with in English stocks at the present day. Feathered and clean legs are also met with; but the accepted type of bird for exhibition is now generally understood to have a

* See Wingfield and Johnson's "Poultry Book," 1853, p. 210.

double comb of a livid or dark purple colour, bluish face and deaf-ears, a crest as full as possible, and feathered dark legs with five toes. The birds are, of course, free from vulture-hocks, and the tail of the cock should be rather short, and with a nice rise from the saddle, very much resembling the Cochin type.

The following notes are from Mr. F. Wragg, who showed Silkies for Lady Gwydyr with considerable success for several seasons :—

"Silkies may be classed as purely fancy poultry, having little but their unique appearance to



Hackle of Cock. Body of Hen.

Fig. 96.—FEATHERS OF SILKY FOWLS.

recommend them. Instead of feathers, they are covered with an abundance of white silky hair ; the wing and tail-quills also being hung with long silky fringe. The skin and legs are blue, the face and comb a deep purple colour, ear-lobes being slightly tinged with white. The best specimens have five toes and are feathered on the legs. The plumage should be pure white.

"The cock should have a full prominent breast ; neck medium size ; hackle very full, flowing well round the shoulders and on the back ; saddle square, and rising upwards to the tail, which should gradually rise a few inches and then droop over. The comb is double, but is wider than long, having a lumpy appearance, with scarcely any points on the top. It should be well on the front of the head, and behind it should be a spur or crest of feathers projecting straight out, about two inches in length. The weight of the cock averages about four pounds. The hen is rather small in proportion, weighing only about two and a half pounds. She is very square and compactly built, breast being full and round, neck rather short, saddle square and well cushioned, tail almost

buried in fluff, which is very abundant, and a fine small head. From the top of the head should rise a small globular crest. The general style and shape are very attractive.

"I consider Silkies hardy. The chickens are easily reared, and generally very true to their parents. They are very moderate layers, but capital sitters. In hatching and rearing Bantams, pheasants, or partridges, they are unequalled."

The most successful exhibitor of Silkies of late has been Mr. R. S. S. Woodgate, of Tunbridge Wells. By the exertions of this gentleman separate classes for Silkies have been established at several shows, which have been filled to an extent that astonished even the most sanguine, and proving this singular fowl to have been bred to an extent little suspected. He has kindly supplied the following remarks and practical notes on Silky fowls :—

"White Silkies should be great favourites, and are daily becoming such. Every one who has had to do with them cannot help speaking highly of them. They are birds which will do well in an enclosed run, and will always be cheerful and contented, and this is a great thing, for nothing can be more unhappy-looking than a bird moping about with its head sunk almost into its breast, as we so often see in the case of a confined bird. But not so with Silkies : they are always on the scratch, always looking cheerful and bright, and keep themselves much cleaner than the generality of light-coloured birds ; and consequently I can especially recommend this breed to those who only want to keep a few birds, and have only a limited space.

"But to rearers of pheasants and the more delicate breeds of poultry are Silkies pre-eminently useful : first, because they are such admirable sitters ; and, secondly, because they make such good mothers, take such care of their chickens, and run so long with them. Certainly they can only cover a moderate number of eggs, on account of their small size, and this is why I think it no good to breed these birds too small. I should be sorry to see them become mere Bantams, which is what many seem to think they should be, for they are essentially a breed adapted for sitting and rearing purposes. They generally lay about thirteen or fourteen eggs before desiring to sit ; very rarely more, and frequently only ten or eleven. This is another reason which makes them so valuable for early sitting purposes ; as pullets if moderately early hatched will always lay in the next January. If not wanted to sit, a change of place for two or three days will soon make them forget the propensity, and they will speedily lay again.

"As regards their points, it now seems definitely settled that for exhibition they should be quite white, crested—a nice round compact crest, and not a cockatoo-shaped one as we sometimes see—five-clawed, feather-legged, but no trace of vulture-hocks, mulberry-shaped double comb, of a bluish-purple colour, and blue ear-lobes. Many birds, however perfect they may be, are apt to throw single-combed or four-clawed chickens, but when this appears a cross may be generally suspected. I am told there is a single-combed breed in India much resembling our Silkies, but distinct from them, and possibly this may have been used at some time or other as a cross, though there is no proof of it ; in fact, I believe no case is really known of this breed having been introduced into England. As an example of how Silkies are apt to breed birds differing from themselves in certain show points, I myself last year bred some of my best double-combed feather-legged birds from clean-legged single-combed ones ; and again this year some of my best double-combed birds are throwing single-combed chickens. To stamp this out we can only keep picking out the perfect ones and breeding from them to perpetuate these points. One thing about Silkies is, they never want any tail-plucking or comb-carving, which some breeds do, and therefore they are quite within the power of all to prepare for exhibition. The turquoise-blue ear-lobes are certainly the prettiest, but after the first year they get discoloured and patchy, which is a great drawback ; consequently the grey-coloured ones, though not so pretty, are perhaps the best, as being the most durable.

"Silkies make a good cross for sitting purposes. My friend Mr. O. E. Cresswell last season crossed a Silky cock with a White Game hen, from which cross he saved all the pullets—pile-coloured small-crested birds—and they have turned out exemplary sitters and mothers, beginning to lay in the early year, and after laying ten or twelve eggs sitting well. This is really a valuable thing to know, for who is not hard up for sitting hens in January and February?—I know I always am. Silkies themselves are good layers, and begin to lay about seven months old; the eggs are a pretty cream-colour, but of course rather small.

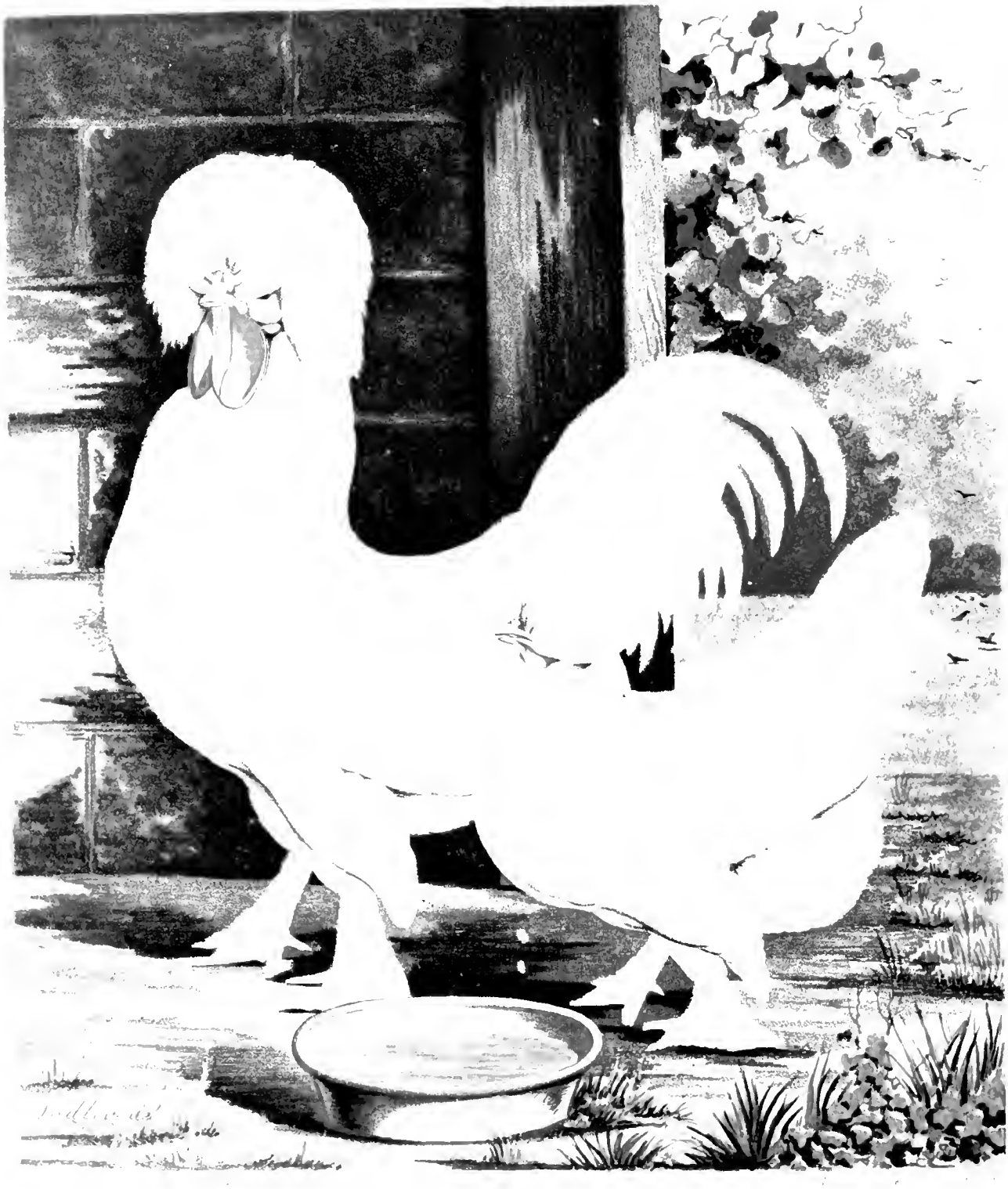
"To get Silkies up for exhibition they want to be washed much in the same way as Mr. Elijah Smith recommends for White Cochins, only they need great care, for they soon become so saturated in the water that their strength seems to fail, and they hang down their heads in a convulsive kind of way; when this happens I have often quite saved them by putting them suddenly into very cold water. This may seem a dangerous remedy, but I have saved lives often by it. In drying them they must not be put too near a fire, as their ear-lobes will blister easily.

"This breed is subject, perhaps more than any other, to scaly legs—that horrid disease known as elephantiasis. I have seen birds with great lumps of this right up their legs. It is, I believe, an infectious disease, as some birds which were running with a brood of Silkies last year caught it, and there had been no trace of it before. The birds were Dorkings, and I believe this breed is not at all prone to the disease, which originates from a small insect. A bird once affected will sometimes get so bad as hardly to be able to walk without inconvenience, and I have seen a judge at a show pick off a piece as big as a walnut. When the bird is thus badly affected the legs must be steeped in hot water several times, till the matter becomes soft, when it is easily picked off; and on its again appearing an application of compound sulphur ointment soon cures it. It makes great havoc with the leg-feathering when once it appears, and a bird which once has it is seldom fit for show again afterwards, as it seems quite to stop the feathers growing.

"Silkies are really very easily reared. They require no care; once hatched, they do well with only ordinary care. Their eggs should be kept well moistened the last week of incubation, as the inner membrane of the shell is apt to become very dry, and the shell of the egg entirely peels off in some cases. Great care should be taken to allow Silkies in no way to have intercourse with other breeds, as the violet skin is very difficult to breed out when once got, and consequently spoils birds for the table. Recently I saw a pair of true-bred Silkies sent up with a snow-white sauce, and the effect was most peculiar; their flesh is really as tender and nice as any other, when once the violet skin is cut through. The illustrations of the Silky feathers (see Fig. 97) are taken from very good specimens. Sometimes we see birds only silky in part of their feathers, the rest being like an ordinary white feather; but when this is so a cross may generally be suspected, for of course from their very name they should be as Silky as possible.

"I hope to see the shows taking up this breed and giving them a class. On their 'opening day' at Oxford last year a class was seen which my most sanguine hopes on first making it never expected to realise; and again this was followed with the same results at the Crystal Palace Show. Any one who will give them a trial, simply for their sitting and rearing virtues, will never repent it, even when looking at them quite apart from fancy fowls; and being such small eaters, it would pay much better to keep a quantity for sitting purposes instead of the bigger birds which have such huge appetites, especially as in the early year we only put a small number of eggs under a hen in any case."

Silkies are sometimes called Negro fowls, from the black colour of the head and skin; but this term appears to have been applied by Temminck to a breed possessing these points, with black plumage, but without the silky character—whether produced by a cross with the Silky fowl or not



MR ROBERT LOFTS PAIR OF
SULTAN FOWLS,
SECOND PRIZE IN "ANY VARIETY" CLASS AT CRYSTAL PALACE, 1872.

is uncertain. It is certainly a fact that when crossed with other varieties the peculiar plumage is generally lost, while the black or violet skin and bones remain for several generations. Hence the breed is one which should never be crossed. Black Silkies have been mentioned, and would certainly take prizes if shown, but we never yet heard of any birds being actually seen, at least for many years past.

The peculiar formation of the plumage is occasionally met with in Cochins, which are then also called Silky, and sometimes Emu fowls. By breeding these together a permanent variety may be established, but it is far inferior in beauty to the real Silky fowl. It is, however, worth remark that the Cochin plumage is, as it were, *half-way* towards the character of the Silky, the feathers having much less strength, elasticity, and power of adhesion than other fowls', and being on any part of the body far easier bent or broken; hence the difficulty of keeping the plumage in what is called "good condition." This is well seen in the small and soft feathers of the Cochin cock's tail, and still more so in the characteristic "fluff," which presents an almost silky character in the best birds. Hence we are not surprised either that the Silky fowl itself should present marked Cochin characters in the feathered legs, tail, and saddle or cushion; or that, on the other hand, the Cochin should be the variety which most frequently exhibits as a sport the silky character. We have heard of Spanish fowls throwing occasional Silky "sports," but the authenticity of such cases is very doubtful.

SULTANS.—These pretty fowls were introduced by Miss Watts, to whom poultry-fanciers are in many other respects indebted, and who gives the following account of their importation :—

"They were sent to us by a friend living at Constantinople, in January, 1854. A year before, we had sent him some Cochin China fowls, with which he was very much pleased; and when his son soon after came to England, he said he could send from Turkey some fowls with which we should be pleased. Scraps of information about muffs, and divers beauties and decorations, arrived before the fowls, and led to expectations of something much prettier than the pretty Ptarmigan, in which we had always noticed a certain uncertainty in tuft and comb. In January they arrived in a steamer chiefly manned by Turks. The voyage had been long and rough; and poor fowls so rolled over and glued into one mass with filth were never seen.

"We at once saw enough to make us very unwilling to be entirely dependent for the breed on the one sad-looking gentleman with his tuft heavy with dirt, dirt for a mantle, and his long clogged tail hanging round on one side; and we wrote directly for another importation, especially for a cock, and to ask the name they had at home. In answer to the first request, we found that good fowls of the kind are difficult to get there; our friend has ever since been trying to get us two or three more, but cannot succeed either in Constantinople or other parts of Turkey: the first he can meet with will be sent. With regard to the name, he told us they are called Serai-Täook. Serai, as is known by every reader of Eastern lore, is the name of the Sultan's palace; Täook is Turkish for fowl; the simplest translation of this is, "Sultan's fowls," or "fowls of the Sultan;" a name which has the double advantage of being the nearest to be found to that by which they have been known in their own country, and of designating the country from which they came.

"They rather resemble our White Polands, but with more abundant furnishing, and shorter legs, which are vulture-hocked and feathered to the toes. In general habits they are brisk and happy-tempered; but not kept in as easily as Cochin Chinas. They are very good layers; their eggs are large and white; they are non-sitters and small eaters. A grass-run with them will remain green long after the crop would have been cleared by either Brahmas or Cochins; and with scattered food they soon become satisfied and walk away.

"They are the size of our English Poland fowls. Their plumage is white and flowing; they have a full-sized, compact Poland tuft on the head, are muffed, have a good flowing tail, short well-feathered legs, and five toes upon each foot. The comb is merely two little points, and the wattles very small. We have never seen fowls more fully decorated—*full* tail, abundant furnishing, in hackle almost touching the ground, boots, vulture-hocks, beards, whiskers, and full round Poland crests. Their colour is pure white; and they are so very beautiful that it is to be hoped amateurs will procure fresh importations before they disappear from among existing kinds."

Many attempts have been made to procure a fresh stock of Sultans, but with the exception of another imported hen procured by Mr. F. Zurhorst, and which proved of the greatest use in recruiting the strain, none have been successful. This difficulty in obtaining fresh blood makes it very desirable that there should be more breeders of this beautiful variety, since it is a well-ascertained fact that by rearing many birds in different localities, even from the same stock, the evils of in-breeding can be avoided, different soil and feeding appearing to "change the blood" sufficiently for practical purposes. Mr. Loft, from whose birds our plate is drawn, considers them rather a delicate breed; but most other breeders only attribute this delicacy to chickenhood, and state that when matured they are tolerably hardy. All agree that they eat very little, and are good layers, while it must be allowed that no more fascinating fowls exist. They have the quaint little ways and habits of Bantams, with their brisk yet tame disposition, and appear to take to "petting" with a quiet confidence even greater than that of Polish fowls, which in several respects they much resemble.

In breeding Sultans a chief point is to select *full* crests, that feature being particularly close and round in this breed. The hocked and feathered legs must also be looked after; and so should the fifth toe, and the muffling, which have of late been somewhat uncertain, owing in our opinion to a cross with the White Polish. Even the prize birds shown in the plate, it will be seen, have little muffling, and are destitute of the fifth toe. The average weight now is about four to five pounds for the cocks, and three and a half pounds for the hens; and so long as other points are not sacrificed, it is very desirable to increase this by good breeding, feeding, and the use of phosphates in the manner we have already recommended. By such means we feel sure considerable gain might be made both in size and hardihood.

The cock's spurs are peculiarly liable to grow very long when the bird gets old, and so much curved that the point enters the leg and causes much pain. This should be watched against, and if necessary the spur shortened sufficiently to prevent such consequences. The operation, of course, gives no pain whatever. We have not seen this in any other breed, except on one occasion, when we met with a very old White Cochin cock suffering from this cause.

Being desirous of omitting no known breed of poultry from this work, we applied to Mr. Hewitt for names of any others he might have met with in the course of his long and vast experience as a judge; but find we have exhausted the list so far as known at present, with the exception of "a pair of singular fowls which Mr. J. Bissell, of Birmingham, claimed when judging at Bristol some eighteen years back. They were," says Mr. Hewitt, "a good deal like Partridge-coloured Cochins, wonderfully fluffed on the hips, and really well-cushioned, but yet had tails as full as Hamburghs. The legs, very heavily feathered, were certainly not two inches from the sole of the foot to the knee when standing. They were quite distinct from Dumpies, though they looked as though sitting down when quite close to you on their walk. These were good; but as for the so-called 'Hornets,' 'Vandals,' and such other trumped-up things as come out like rockets and fall like the sticks, they are only first crosses or positive mongrels."

JUDGING THE VARIOUS CLASSES.—In judging the various fowls we have now been considering, much thoughtful consideration is demanded at the hands of the judge. It is not to be forgotten that the class in which these, and at most shows some other varieties considered by us under their specific heads, are usually shown, has two distinct objects. One of these is to allow of birds which are not bred sufficiently to claim a class of their own, to be shown with the chance of a prize; the other, to encourage the introduction, or what may be called the "publication," of new or unknown varieties. It can hardly be questioned that this last object is the most important, and that a really *bonâ fide* new variety, presenting any promise of utility or any distinctive points of beauty, should as a rule have the preference over older varieties, which, having been long tried and known, have failed to make their way in the poultry world sufficiently to have a class of their own. It cannot be said that no such new varieties are likely to be now met with; considering how very lately Japan has been opened to Europeans, and how very partially China is open even at the present day; whilst even "made" breeds of permanent value may yet be produced. A good look-out should therefore be kept for all such novelties, which, if apparently pure-bred, should by all means be encouraged till it begins to be seen "what they have to say for themselves." Besides this, the judge has to review a number of elements, some of them almost contradictory. He has to consider the scarcity of a breed; its practical or intrinsic utility, and therefore desert of encouragement on that ground; its beauty, and consequent desert on *that* ground; and, lastly, the perfection of the specimen itself as regards breeding and condition. This last alone is often difficult to decide, since most of these fowls are so seldom shown that fixed canons respecting them scarcely exist, and we can only attempt to give scales for Sultans and Silkies. They have as a rule to be judged "on their merits" as appreciated by the judge; and to compare one breed with another is, under the most favourable circumstances, an invidious and thankless task.

We may make one suggestion on this point which would help judges materially; namely, that the list of prizes in this class should be in all cases *greatly extended*. Instead of the usual three, there should be at least six; and instead of having them to range from first to sixth, it is *far* better—both easier for the judge and fairer to competitors—to arrange them as two first prizes, two seconds, and two thirds. By this means the arbitrator will find his task much facilitated, since he has not to decide six nice gradations, but can bracket pens which seem of nearly equal merit together instead of deciding which is the absolute best—always, as we have seen, a disputable point—and in this way, at small expense, substantial justice may be done, and breeds which now languish might receive more remunerative support. No additional expense at all would be incurred where the sexes as a rule are shown separately, if complete pens containing both sexes were made up in this class; which for such breeds is a far better plan. We should then be spared the anomaly, now *forced* upon the judges at many shows, of seeing a cock of a given breed awarded first prize in his class, while hens of the same variety, of equal merit, are passed over in the hen class from the sheer necessity of giving equal honour to some *other* breed; the prizes being thus divided as equitably as such a bungling system renders possible.

SCHEDULE FOR JUDGING SILKIES.

GENERAL CHARACTERISTICS OF COCK.—*Head and Neck*—General appearance of head bright and lively, in spite of the dark colour; beak rather small; comb double, as neat as possible; crest behind the comb usually pointing back, but preferable if approaching a Polish character; wattles rather long and pendent; deaf-ears pendulous; neck moderate length, full of hackle, and carried a little forward compared with many other breeds. *Body*—General appearance neat and pretty; the back broad and short; saddle wide, and rising to the tail; wings rather small and carried low; breast full, and shoulders neatly rounded. *Legs and Feet*—Thighs well furnished with silky fluff, hanging down over the hocks, shanks rather short and feathered; toes thin, with an

additional or Dorking toe behind. *Tail*—Rather small and soft, much resembling that of the Cochin. *Size*—Averaging four pounds, but looking larger than it is, owing to the loose feathering. *General Shape*—Rather short and deep. *Carriage*—Rather forward.

GENERAL CHARACTERISTICS OF HEN.—Generally resembling those of the cock, but her crest is more compact and globular *Size*—About two and a half to three pounds' weight.

COLOUR OF WHITE SILKIES.—*In both Sexes*—Comb, face, and wattles dark purple or ripe mulberry colour. Ear-lobes blue or greyish blue. Eyes generally black or very dark hazel, but sometimes red. Legs and feet deep blue, approaching black Plumage all over white, as pure as possible, a straw tinge being objectionable, though very rarely quite absent.

BLACK SILKIES, if ever shown, should be admissible in a Silky class.

VALUE OF DEFECTS IN JUDGING.

Points of Merit.	
A bird ideally perfect in shape, colour, style, plumage, carriage, and condition, to count in points	100

Defects to be Deducted.	
Bad head and comb	10
Bad crest	8
Absence of crest	16
Yellow tinge in plumage	12
Absence of feather on legs	14
Absence of fifth toe	12
Want of symmetry	15
,, ,, condition	15

DISQUALIFICATIONS.—Any feathers not truly "silky" in any part of the body. Foul-coloured feathers. Vulture-hocks. There is an increasing tendency to make absence of crest, of fifth toe, or of feather on the legs disqualifications; in a few years they will probably be considered as such.

SCHEDULE FOR JUDGING SULTANS.

GENERAL CHARACTERISTICS OF COCK.—*Head and Neck*—General appearance of head piquant and vain; beak short, curved, and with Polish nostrils; comb very small, consisting of two almost imperceptible spikes; crest very full and neatly arched over; wattles small; face covered with thick muffling, reaching under the throat and forming a beard; deaf-ears small and hidden by the muffling; neck moderate in length, well-furnished with hackle, and carried very upright and arched. *Body*—General appearance compact and deep; breast deep and carried very forward; wings rather large and carried very low, or with the points down; back straight, and rather drooping towards the tail. *Legs and Feet*—Thighs rather short, well-furnished with feathers, forming long vulture-hocks, covering the joint; shanks short and heavily feathered to the ends of the outer and middle toes; toes straight and thin, with an extra or Dorking toe behind. *Tail*—Full and large, with fine sweeping sickles. *Size*—Rather smaller than Polish, averaging five pounds. *General Shape*—Deep, but neat and compact. *Carriage*—Resembling that of the White-crested Black Polish cock, but lower on the leg.

GENERAL CHARACTERISTICS OF HEN.—Resembling those of the cock, allowing for the difference of sex. Average weight three and a half pounds.

COLOUR OF SULTANS.—*In both Sexes*—Beak white. Comb and wattles brilliant red. Deaf-ears immaterial, being covered by the muffling. Eyes red. Legs dark blue or black. Plumage all over a spotless white.

VALUE OF DEFECTS IN JUDGING.

Points of Merit.	
A bird ideally perfect in shape, style, colour, and condition, to count in points	100

Defects to be Deducted.	
Deficiency in size or fullness of crest	12
Comb too large	8
Faulty colour	12
Deficient muffling	15
,, leg-feather	12
Want of symmetry	15
,, ,, condition	15

DISQUALIFICATIONS.—Crooked backs, wry-tails, or any bodily deformity. Foul-coloured feathers. Absence of crest. Legs without feather, or any colour but white or pinky white. Some consider that absence of fifth toe or of muffling *ought* to be disqualifications; but they certainly are not so with many judges, and most Sultans now shown have little muffling, and much larger wattles than when first bred, while the prize birds shown in our plate were without the fifth toe.

CHAPTER XXIX.

BANTAMS (EXCEPT GAME).

THE diminutive breeds denominated Bantams, from some totally erroneous supposition that they had been derived from the place bearing that name, have always been popular amongst poultry-keepers, and the space before their pens is nearly always thronged at a good show. Many of them have their good points as layers, and for the food they cost are by no means unprofitable poultry; but all have one conspicuous merit at least—they can be kept in small places, and in neighbourhoods where no large variety of fowls could be kept at all. They are content with small space as well as small meals; and even their little crow does not annoy neighbours who would quickly repeat the teapot storm of the celebrated "great peacock case," did the amateur keep a sonorous rooster of the orthodox persuasions. Nearly all of them—even the Game—are naturally tame and familiar in disposition; and for all such reasons and more, these little minnikin fowls afford an amount of happiness it is difficult to estimate, and place the highest pleasures of poultry-keeping within the reach of hundreds who otherwise must go without them altogether. Many a lady, tired of having nothing to pet but a tom-cat, has wondered longingly whether she might not keep a few fowls; but looking at her garden with regretful eyes, has decided that half of it would be needed, and that she could not spare that; when the happy thought has crossed her mind, "Why not keep Bantams?" A little space—just that strip which can so easily be spared—will content *them;* and as to crowing, who in the world would mind the voice of a little fellow no bigger than a pigeon? She is made happy; and even the tom-cat, ousted at first from his olden place, but who has provided for him a never-ending subject of interest in the perpetually intense speculation as to the possibility of some peculiarly tiny chicken coming some day through to the wrong side of the wire—even he is made happy too. Decidedly Bantams have their place in the world.

Even more than this may be said for them. They eat next to nothing, and may often be kept going entirely on bread-crumbs and such like *rejectamenta* from a small household; while we have already remarked that some of them are really good layers. And if their eggs are small—well, most delicious things *are* small. We have often wondered why peas were not made as large as beans; but they are very good as peas nevertheless, and we could ill spare them. And Bantams lay delicious, delicate, fairy eggs, to be tenderly ransacked by fairy fingers with a fairy spoon; or, if there be a very little child, who so delighted as she either to eat herself, or to see her mother eat, the little egg from "her little hen?" We have heard, too, of delicate invalids, who on "bad days" could touch nothing but those same Bantam eggs laid by the pet hen—the first morsel that had passed the thin white lips when the life and strength so nearly lost began to come struggling back, and still relished at times when everything else was turned from with disgust—brought in on bright green moss, to be welcomed with a smile, and cooked there and then (as Bantam eggs should be), by simply pouring boiling water upon them in sight of the invalid, so as to awaken interest and appetite together. Yes, they have even their uses. Pretty, interesting, useful, lovable—we pity the hard-headed man who can't admire a Bantam. What if the airs of the little rooster do

seem a bit ridiculous?—he can at least fly over a fence which would puzzle many of us to clear as well; and "Sartor Resartus" might have taught us long ago how much *we* owe to the tailor. Let him roost, then, as high as he likes, while we proceed to consider the different varieties of his race.

For convenience, we shall take the various breeds of Bantams as known to us alphabetically, reserving the large and important division of Game Bantams for a separate chapter, and giving special attention to the breeds which are most largely bred and exhibited, and therefore demand unusual skill and care from the amateur.

BLACK BANTAMS.—This is one of the oldest and still most popular Bantam classes, though no breed shows more distinctly the increased skill and knowledge of the breeders of the present day: for while all the older poultry writers speak of the uncertainty of colour in Black Bantam cocks, most of them being described as moulting red or straw-coloured hackles in the second or third season, the present strains of these birds, as we know from frequent inspection of one of the best, moult as true to colour as any variety whatever. The bird has also been improved in shape and carriage, marked advance in these last respects having been made within the last six years. In some cases an expedient we have often suggested, of crossing with the Brown-red Game Bantam hen, has been employed, to the great gain in several respects; and last year, particularly, we observed almost *too* evident signs of the cross: but much more has been done by careful selection in breeding, and perhaps few have had more to do with the history and improvement of this variety than Mr. E. Hutton, of Pudsey, Leeds, who has at our request, besides general notes on the breed and its characteristics, supplied the following particulars concerning the history of his strain, which has been the parent of many others.

"I had Black Bantams," he says, "more than thirty years ago; not, however, the breed of the present day, nor in some respects even approaching it, for one of the most desirable points then was, as in all other Bantams, that the head and tail of the cock should touch when the bird was showing himself off, while rose, single, or cup combs were equally valuable, those with single combs being termed *Game Dandies*. From that date up to 1854 I had Bantams of all varieties, never, however, losing sight of the Blacks, which were always my special favourites; and since then I have never been without them. Some of the blood of these early birds runs in the veins of those I at present possess. They were good in colour and well feathered, with red faces and ear-lobes.

"For several seasons I tried by various crosses to improve the breed in style and ear-lobe, but with only partial success; as in nearly all cases, when the ear-lobe was secured, the cockerels were more or less spangled on the back and hackle with red or brassy feathers. At last I got what I wanted in the White Bantam. White Bantams, with sound white ear-lobes, which were at that time plentiful in Yorkshire, have been in fact the most useful agents in the improvement of the Blacks, though the White birds produced from the cross have almost always proved useless for the production of Whites.

"In 1858, for the first time, I ventured upon the introduction of the White blood, by putting a good White cock, out of a strain that was at that time very successful at the shows, to several Black hens with gipsy faces, combs, and ear-lobes. The chickens from this cross varied much in appearance on hatching, some being pure white, and on attaining their adult plumage remaining so; others were smutty grey, turning out ultimately white, with blue legs; while some were perfectly black, but on getting their last feathers came red on the saddle. Others, on hatching, were black on the upper parts, but white on the lower jaws, throats, bellies, and ends of the wings. These last were the best birds of all when full grown and fledged, remaining sound in colour, while most of the cockerels had from the cross pretty good ear-lobes.

"The following year I bred from the best of these Black cockerels with the choicest red-faced pullets, the result being pretty much the same as from the original White cross; but as I now had some idea of what the various coloured chickens would turn out, I destroyed at once all that hatched entirely black, so that I had no birds grow up with red saddles. The strain of Whites to which I refer was splendid in style, carriage, and feather, but rather strong in bone; and the consequence was that the chickens took after them, many being very large, so that some of the cockerels might almost have been mistaken for small Black Hamburghs. I had, therefore, to reduce the size, which I effected by careful feeding on diet specially adapted for the purpose,* and by hatching them late in the season, allowing them to run with the hen the whole of the winter, or, in case of failure on her part, supplying artificial heat. So successful was this process that it never had to be repeated, and two of my smallest hens, which won me many first prizes and were never beaten, were hatched from a hen that weighed more than two pounds.

"During the following winter my best cockerel was beaten (as a single cock) at a good show by a rather short-feathered bird, which was small, and had moderate ear-lobes. This bird I was therefore tempted to purchase as a cross. As to the cockerels this was a great mistake, as I had not a single really black one from him out of over seventy chickens that I reared; but many of the pullets were little gems. With some of these I had recourse again, and for the last time, to the White cross, using a nice blue-legged bird; and by carefully selecting the best birds for about three seasons, I succeeded in establishing my present strain of Black Bantams, which I think cannot be surpassed, breeding as they do so true to points, that out of several hundred chickens I have not had a dozen birds faulty in feather or with single combs. I may however add that three years ago one of the most perfect White cocks ever produced, and which won its owner many laurels, was bred from a sitting of *Black* Bantam eggs of my strain. For several seasons, of course, I have been glad to avail myself of birds for stock from yards which have been established from my own; by which means, without crossing, I have been able to keep up the stamina of my stock to such an extent that some birds two and three years old carry as much and as good feather as usually carried by early-bred cockerels.

"This is one of the most beautiful of the fancy varieties of poultry; and though generally looked upon as a strictly ornamental breed, yet I claim for it a place second to none (the Hamburgh excepted) for egg-producing properties, and for the returns they will give for the outlay in food; as most of them are almost incessant layers of comparatively good-sized eggs, except during the coldest winter months, when few varieties can be relied upon for that purpose. Some of the hens are very keen sitters, and these always prove the best of nurses, defending their young most pluckily against all enemies; though many never become broody, and I have at present several hens nine or ten years old that have never evinced the least desire to rear a family.

"Adult birds are very hardy and the chickens pretty easily reared, although during the attainment of the first feathers they require much care, for if neglected at that time many of them droop and die. At an early age they are very pugnacious, the cockerels often commencing to fight most determinedly at the age of five or six weeks. The whole of a brood generally presents a most disreputable and pitiable appearance at the end of a day's campaign—some dying and others being scalped or otherwise permanently injured—though when about twelve weeks old they will settle down and agree much better, chickens of different broods seldom attacking each other, even if kept together long after they are full grown. The pullets also are very precocious, and if bred in the spring months, and well fed, they will often commence laying at from fifteen to seventeen weeks old.

* See remarks on rearing Bantams, p. 476.

"In size the cocks vary from about fourteen to twenty-four ounces, most of the best birds being eighteen to twenty ounces. The hens vary from twelve to twenty ounces when in laying condition, though I have often had them lay when not more than ten ounces; but mere weight would never influence me when judging the variety, for many birds are actually smaller in appearance at twenty-four than others at eighteen or twenty ounces.

"The standard to which I incline for this variety, and which as regards style has been most thoroughly endorsed by our leading judges ever since the improvement of the breed was commenced, I will give as briefly as possible; and I would here remark that no one has had more to do with the establishment of the breed than Mr. Hewitt, who at the time to which I refer was judging the main bulk of the shows, from which time to this I have never know that gentleman deviate from the style of bird which he selected as the recipients of the leading honours. The beak should be short and slightly curved, black or a deep horn-colour; the face, comb, and wattles, bright red or vermilion; and the eye deep red or hazel. The comb should be double, or what is known as 'rose;' broad in front, tapering to the back, and ending in a well-defined spike, which should incline slightly upward, the surface being level and well serrated, and the whole should sit firmly and closely upon the head. The ear-lobe should be pure white, round, smooth, flat, and substantial, and about the size of a fourpenny-bit in the average-sized cocks. The legs of the young birds are generally black, and those of the adults dark blue or slate-colour, and should be rather short than otherwise. For shape and style I would take that of the Hamburgh in all respects, except that if the wings be a little more drooping it adds greatly to the character and beauty of the bird. The chest should be broad and prominent; the neck curved and full of feather, or what is known as 'bull-necked;' the hackle flowing well over the back, which should also be broad and deep; the saddle-hackle forming a good fringe over the sides of the wings. The tail should be open and the sickles long; the sides of the tail being well-furnished with half-sickles or side hangers, and the whole carried well backward—a squirrel-tail being an abomination I would not tolerate. In fact, the whole contour of this miniature Hamburgh should be quite distinct from the Game, and I would as soon disqualify the Black Bantam for a whip-tail, tucked-up wings, and long legs, as a Game Bantam for drooping wings and open tail.

"The colour is generally a rich metallic black; but I prefer the rich olive of the Black Hamburgh, to which there is at present a tendency, and in my opinion the latter breed will have to be used for the attainment thereof. At all events, all other crosses for the purpose have failed with me; though last year I succeeded in breeding a few cockerels with the desirable tinge, containing an eighth of the Black Hamburgh cross."

The Black Bantam, as brought to perfection, is in fact a perfect miniature of the Black Hamburgh, having not only the neat rose-comb and white ear-lobes, but the same free and sweeping outlines, quite distinct from the old "stumpy" pattern Mr. Hutton describes. In regard to the practical breeding and management of this beautiful little bird, we have been kindly furnished with the following full and practical notes by Mr. E. Cambridge, of Cotham, Bristol, who has for some years been one of the most successful exhibitors:—

"Black Bantams are one of the most beautiful of the many varieties of these miniature pets we now possess; the brilliant black plumage, coral-red comb, and snow-white ear-lobes form such a contrast as no other rival can boast of. Having kept them without intermission for nine years, during which time I have also kept every other variety of Bantam, I can also testify that they are unsurpassed in their laying qualities, and are very good mothers. Many people despise Bantams, and consider them useless on account of their small size. This is quite a delusion. Independent of this quality rendering them particularly suited for confined places, and to be kept in aviaries as

pets, where large fowls could not be thought of, they make quite as good a return for the food they consume, which is very little, as their larger brethren. Their eggs are exceedingly rich and nutritious, having a very large yolk in proportion to the white. The flavour is not so strong as that of ordinary eggs, and for this reason especially suited for invalids, and for making custards, &c.

"I commenced my Bantam career in 1863, by purchasing a pen for thirty shillings, and won a prize at a small show the first time I exhibited them. For the first three years, however, I was not very successful either in breeding good birds or winning prizes. I committed the common mistake of most amateur beginners, viz., continually buying second or third-rate birds, which could never win in a good show or breed good stock, at a cost sufficient to make my hobby a serious loss, but not expensive enough to make it pay. I was afraid to invest a good sum in really good birds, and my experience has taught me that, whether a poultry-yard is started with the idea of making it pay, or from a mere desire of the honour of winning cups and prizes, it must be done well and without stint.

"The points necessary to constitute a good Black Bantam cock, whether for breeding purposes or exhibition, are as follow:—A perfectly white ear-lobe of moderate size, round, substantially thick, and with an enamel-looking glaze on it. Comb neat, flat, a bright coral-red, well spiked on the top, and terminating at the back in a well-developed pike, inclining a little up rather than down on the head. Plumage abundant, and a good black, with a metallic green or blue lustre, the former preferred. Legs black, or deep slate-colour, small, and taper. There is some difference of opinion as to shape and style, some people thinking a Black Bantam should be drooping in the wing, and carry the tail over the back, like Sebrights. My ideas, however, and those which predominate at most shows now are, that they should be tight in feather, wings well up and close, sickles long, well arched, and rather drooping, the whole carriage being smart and gamey. The hens I prefer moderately long in leg, as they show off better.

"In selecting birds for breeding, great care should be taken to secure those most nearly approaching perfection, but never choose one with a glaring defect because it happens to have one or two other points very good. Three hens, or four at most, are enough for one cock; and here let me remark that, in opposition to the common idea that birds related to each other should never be mated together, I have proved, and am therefore convinced, that to a moderate extent, and with judgment, the system can be carried out with much benefit. The chickens come better in all points, and have much more *quality* about them, than when they are bred from the first cross of a cock from a different strain, introduced for fresh blood. This system can be followed to a greater extent in breeding Bantams than the large breeds, as size, which is the point in which they mostly deteriorate under the system, is not required.

"To get them as small as possible, Bantams are generally hatched very late in the season. Birds so hatched, however, are always deficient in plumage and style, and I prefer to set my hens in April or May, and stand the chance of the chicks growing large. They are rather delicate when about six weeks or two months old, as they grow their feathers very fast at that period, and are almost in full plumage at three months. They do not require a large run, and will do well on a lawn or in a kitchen garden, the hen being cooped. A farm-yard would be a ready-made *grave-yard* for them. Egg and bread-crumbs, and barley or oatmeal is the best food for them at first; afterwards grits occasionally, which they are very fond of. Any artificial or forcing food I consider bad for any fowl, but especially Bantams. When about four months old, I separate the cockerels and pullets. By this means several of the former can be kept together, whereas, even at that early age, being very fussy and pugnacious, they would fight and disfigure one another if left with the pullets.

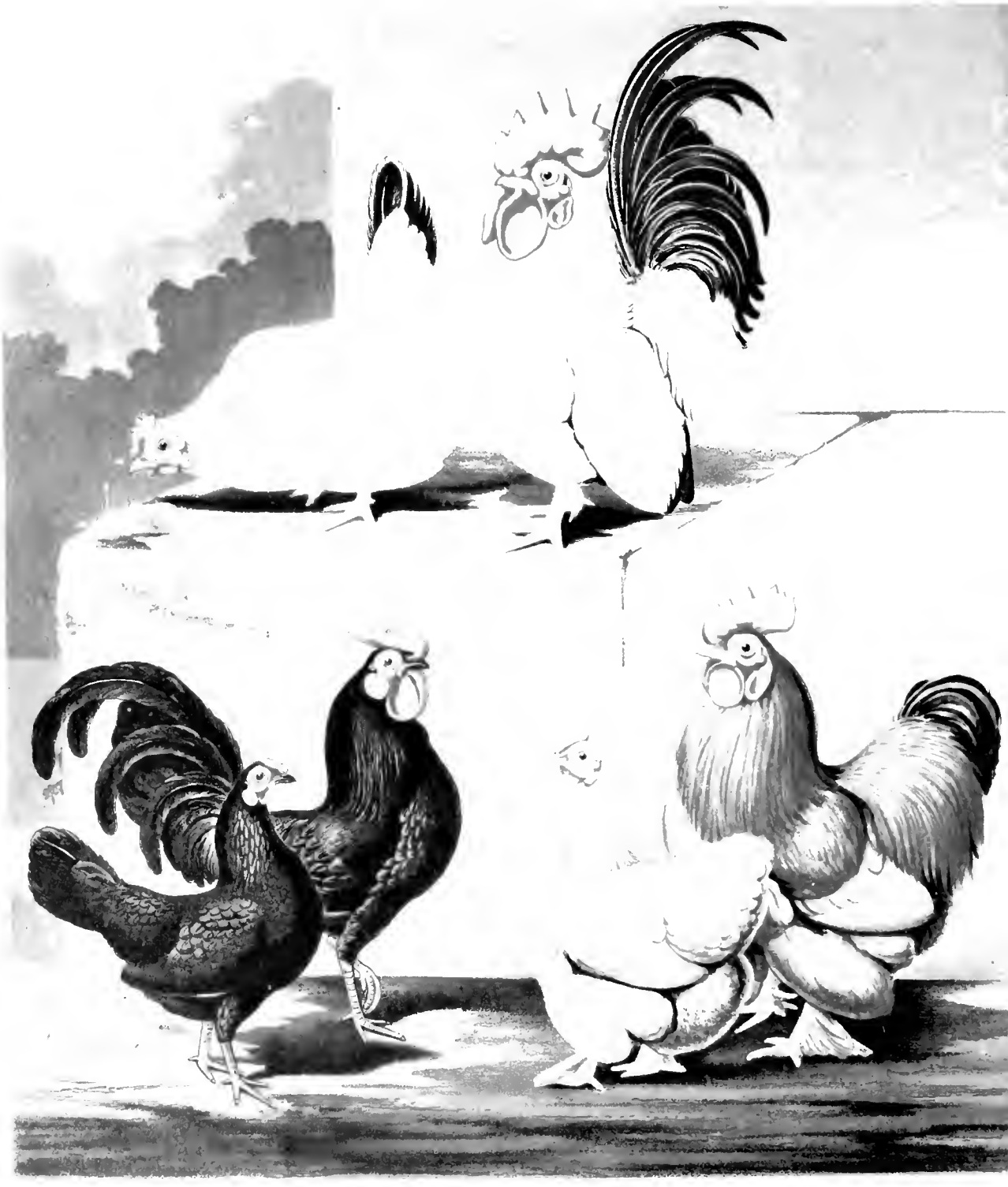
"The ear-lobes being one of the principal points in this breed, great care is necessary to get and keep them perfectly white. Of course you cannot expect to get good lobes unless the bird is well bred, but the very best lobes will be soon spoiled by neglect, that is, by allowing the bird full liberty in all weathers. The sun, cold cutting winds, or frost will all tend to discolour or shrivel up the lobe. On the other hand, by keeping a bird up in a sheltered pen, an indifferent lobe can be greatly improved.

"In selecting birds for exhibition, judgment and experience are required. If I had two cocks; one with very good lobes, plumage, and style, but with an *indifferent* comb, and one with *good* comb and lobes, but inferior plumage and style, I should select the former. Nothing can compensate for any one point being *very* bad; but, on the other hand, a perfect bird is very rare (I have never seen one to come up to my idea of perfection), and those must be chosen which show the greatest general excellence, and look best in a pen.

"The legs of all the birds in a pen must of course match in colour, and if the pen consist of two hens, comb, size, &c., in the pair must be as near alike as possible. The lobes, comb, legs, and plumage, if dirty, must be carefully washed, and the birds fed on some soft food before sending off to a show. Good-sized round baskets, well lined with calico or other material, are requisite: the plumage is often spoiled by the baskets being too small or square. In conclusion, I would say to beginners, Do not expect to carry everything before you at the commencement, and do not be disappointed or disgusted at non-success. Great judgment, experience, patience, and perseverance, are the elements of, and the lack of either fatal to, success."

A difference of opinion will not fail to be observed between Mr. Hutton and Mr. Cambridge on the question of the proper shape for Black Bantams, one preferring the identical "gamey" style which the other dislikes. This difference is undoubtedly real, and the point is one on which, like many others, various opinions may be legitimately held; but we must also remark that it is not so great as might at first sight appear. What Mr. Hutton chiefly means to object to are evidently the long leg and whip-tail of the Game. What Mr. Cambridge chiefly dislikes is the wing pointed nearly to the ground, and an immense fanned tail carried upright or over the back. We have seen birds which we know to have been greatly admired by both breeders; and the type presented by Mr. Serjeantson's beautiful pair of Black Hamburghs, shown in Plate X, with wings carried as there shown, legs of harmonious medium length, and a sweeping, but not heavy, sickled tail, would certainly meet with the approbation of all parties. For ourselves, we consider this Hamburgh type in *all* points the most pleasing, and in our view the most correct; and this opinion does not greatly differ from that of Mr. Hewitt, who has already so kindly given his views on various kindred points of judging as well as in the present case. "A really good Black Bantam," he writes, "should possess, size only excepted, the general characteristics of the Black Hamburgh. This Bantam, however, has its own peculiar pertness and expression of determined familiarity. The calm, reliant courage of the Game Bantam is out of place in the Black one, the latter being the very embodiment of foppery, self-esteem, and an unconquerable desire to make friends at all hazards. Pride and vanity are its marked characters; and it is this impudence, combined with its natty mincing gait, that causes it to be generally an object of interest to lovers of poultry. A long, well-drooping sickle-feather, as in the Hamburghs, is a most important desideratum. The smaller they are the better (some being shewn very small); and, again, perfectly white ear-lobes are indispensable to obtain general success.

"In both Black, and also Sebright Bantams," Mr. Hewitt adds, "regularity of formation of the combs has scarcely been sufficiently attended to of late years by general breeders. It should be continually borne in mind that breeding from those birds whose combs are '*but little out*,' leads



invariably to a far more exaggerated development of the fault in the offspring. It is the wisest policy, therefore, to avoid altogether even slight faults in the combs of brood stock."

We need only add that the Black Bantam is perhaps brought to the greatest perfection of any, unless we except the Game, wonderfully faultless birds being now required to win. At a recent large show we counted no less than twenty-eight pens of these exquisite birds, at least two-thirds of which would have been sure winners a few years back. These facts make most careful and skilful breeding necessary, while everything possible should be done to show the birds in the very height of condition.

COCHIN OR PEKIN BANTAMS.—This pretty little Bantam, as might be supposed, is a "heathen Chinee," being part of the "loot" when the Summer Palace at Pekin was sacked during the Anglo-French Expedition of 1860. It is a diminutive Buff Cochin, but still shorter on the legs than the large variety which it so much resembles. The cock's upper plumage is usually a very rich and deep orange; and the chicks breed remarkably true to feather and other points, which is very fortunate, since the extremely limited stock makes any very strict selection impossible. Mr. Beldon, who kept them several years, writes of them as follows:—

"The gentleman from whom I get them had the first pair seen in England; and he has had the breed ever since, and bred a number every year, and has never crossed them, so that they are as pure as when they first came over. The chickens of the pure strain are always alike, breeding as true as sparrows; from which I believe the variety must have been in existence a number of years. It is in fact cultivated as a fancy variety in China; for I had a gentleman visiting me a few years ago who had a friend that brought over some more from there, but, very unfortunately, they were all killed by a cat. The Chinese, as is well known, have a great fancy for dwarfing different animals, and even plants.

"The cocks do not get fully furnished until the second year, and the shape also is only fully seen then; indeed, I often think these two-year old cocks are even better shaped in all Cochin characteristics than their larger brethren. In colour the hens are a light buff, and the cocks a dark chestnut buff. In disposition they are very quiet and gentle, and with care the chicks thrive and feather well, and very early, being generally fully fledged at two months old. At this age they are very pretty. They are best kept to themselves, as they appear very shy of other breeds, though much attached to each other."

Mr. H. B. Smith, of Brooklands, Broughton, near Preston, whose birds are represented in the plate, writes of them: "I am sorry I cannot give many particulars about them, as we have only kept them a short time. I consider them a delicate breed, and susceptible to cold. They are contented in confinement, and very tame; but seem to thrive much the best when they can run out to get worms and grubs. They seem very fond of picking at a bone, but too much meat must be avoided."

It has been stated that the eggs are generally sterile, unless a cross of some other breed be employed; and there is no doubt whatever that the birds shown by one noted exhibitor were thus cross-bred; but, although unquestionably delicate, neither the experience of Mr. Beldon, or the gentleman to whom he refers as having had the original stock, and both of whom have bred them largely, at all bears out the assertion of sterility, until last season. The gentleman in question, Mr. Edward Kerrick, of Arnolds, near Dorking, Surrey, writes us as follows, under date of July 2nd, 1873:—

"The Pekin Bantams were given to me by a friend, who himself received them direct from an officer in the army which took part in the Chinese War, and took possession of the Emperor of

China's Summer Palace, from which place he sent them along with some other things. I have had them ever since that time, and have never had *any* trouble in breeding them until last year, when I had many bad eggs. This year, I am sorry to say, I have had worse luck still, as two hens died on their nests while sitting, and I cannot discover the cause. The eggs of the third were all bad, so that my stock is much reduced. I begin to think it must be from want of a cross, as I have never from the first had one of any sort, though never till now with any apparent ill effect. I have only treated them the same as my other poultry."

There would be great reason to fear this beautiful Bantam becoming extinct had no fresh blood been found; but we are happy to be able to state that Messrs. John Baily and Son lately obtained a fresh importation from China of some of the most faultless birds which have ever been seen. Even this fresh supply is probably sufficient to save the breed; but as it could not have been established in China without very extensive breeding, it is probable that still further specimens may yet be obtained. In default of such, a cross with the White-booted or Nankin Bantam breeds might be tried, afterwards breeding back to the Cochin stock; and using every means by feeding, and healthy natural treatment, without undue exposure, to strengthen the constitution. There is at present no choice for selecting breeding-stock to given points, and indeed very little need. It is curious, in fact, that the Chinese fanciers appear to have "beaten us hollow" in the fixity and permanence of character they have imparted to this charming little fowl, the Pekin Bantam breeding truer than any other variety we are acquainted with.

More detailed description of the Pekin Bantam itself is not necessary. It should be in all points a dwarf Buff Cochin, but somewhat lower in the leg and carriage than the large breed. The colour of the hen may be any good standard buff, but in nearly all cases that of both sexes is somewhat darker than that now fashionable in Cochins, that of the cock especially being almost as dark as Cinnamon in the upper plumage.

CUCKOO BANTAMS.—A rather pretty breed of Bantams is known by this name, of a Cuckoo or Dominique colour. They have been stated to have been introduced by a gentleman in Yorkshire, and there is very little doubt that his stock was really produced quite independently; but they were known in Scotland for some time previously, having been sent out by Mr. Mitchell, of Paisley, at least as early as 1866, when Mr. Beldon received a pair from him. They are miniature Scotch Greys in every point, having white legs and single combs, and hence are known in Scotland as the Scotch Grey Bantam. Another variety of Cuckoo Bantam is shown occasionally with rose-combs. These have, in our opinion, been probably produced by crossing the Black rose-combed Bantam with the White; the cross of these colours usually producing, as we have often remarked, a certain proportion of each colour pure, a certain proportion of a slaty blue or Andalusian colour, and a certain proportion with the Cuckoo marking in question.

JAPANESE BANTAMS.—Since intercourse was freely opened between Europe and Japan several striking breeds of Bantams have been introduced from that country, all having the common features of single combs, and very short legs, with thick "dumpy-looking" bodies.

The most popular variety at present seems to be one with white bodies and black tails; the tail of the cock being of a very peculiar character. The sickles are very long, and carried upright or over the back, but being little curved, present a very strange sword-like character. This and other general characters may be seen in the plate, which represents well-known birds of this variety exhibited by Mrs. Woodcock, of Rearsby House, Leicester. The same lady has kindly supplied the following practical remarks:—

"One great difficulty in judiciously breeding Japanese Bantams has hitherto been that of obtaining birds to select from for the purpose of crossing; both imported and home-bred birds having been scarce. Hence little choice is often possible; but when an opportunity occurs so that the breeder is fortunate enough to have birds to select from, he should choose a cock of good carriage, with short, clear, yellow legs, drooping wings with black flights, body white, tail erect, with long black sickle-feathers, showing white shafts, comb large and upright, with moderate serrations, and wattles long and red. As very short yellow legs are an essential characteristic of the Japanese Bantam, the hen should be very carefully chosen in that respect, with drooping wings, black flights, white body, and tail large, erect, and fan-shaped. The hen's comb is crinkled.

"The chickens of these Bantams are less faulty and truer to their parents than most other breeds. Early chickens are to be avoided, as they cannot bear cold or damp when young. June and July are, therefore, the best months for hatching these somewhat delicate little pets. The time most fatal to the chickens is when they are shooting their tails and combs. At that period warmth and stimulating food are of great advantage.

"I have bred them more than ten years. The first I bought was a cock, imported by Messrs. Baily and Son, being unable at that time to procure a pair. I afterwards bought a hen from the same importers, but not being then acclimatised, I had considerable disappointment, and was at one time inclined to give them up, as at first they would hardly breed. Perseverance has, however, repaid all my trouble, and I am now able to look upon a large family of handsome Japanese Bantams.

"I may add that they are very quiet and domesticated, and less pugnacious than other Bantams. The hens are careful and good mothers, and very good layers."

There is another variety of the White Japanese Bantam, in which the cock's tail flows in a fine sweeping semicircle. In perfect specimens, the centre of these feathers is of the deepest glossy black, finely edged or laced with white, like the tail of a Silver-pencilled Hamburgh, but with even greater contrast and definition of the two colours, the gloss on the black in good specimens being marvellous. Such birds rarely fail to take prizes, but are very scarce, cloudy or mossy tails being more the rule.

A third variety of Japanese Bantam has been very successful wherever exhibited, especially in the hands of the Rev. W. Serjeantson. In general shape it resembles the White Japanese with sickled tail, but is of a cuckoo colour; or rather, perhaps, a kind of irregular speckle, somewhat resembling Houdans. These are stated to be fairly hardy and to breed freely. It is believed that the progenitors of this variety originally "sported" from the White; and, accordingly, the chickens are far from being as true to colour as could be wished.

LACED BANTAMS.—The beautiful Gold and Silver Laced Bantams, also very commonly called Sebright Bantams, are perhaps the most extraordinary proof of what can be done by careful breeding which could be found within the pages of this work. So entirely is every feature the result of art, and so well did Sir John Sebright (known as a skilful breeder of shorthorns and other animals, as well as of poultry) keep his secret as to the process of manufacture, that for a long period the most erroneous and contradictory accounts were current as to the origin of these beautiful birds, some affirming that they had been imported from the East. After the death of the right honourable baronet, however, truer accounts, obtained from various members of the family, began to appear; and in the *Journal* of *Horticulture* for 1865 was published the fullest and most detailed account of the matter we have yet seen, as follows:—

"It was about the year 1800 that the late Sir John Sebright first began to fashion the Sebright

Bantam. The cross was between some common Bantams and the Polish fowl. These were bred in-and-in until the required marking and size were secured. Sir John then accidentally found a short-tailed Bantam cock in the country when he was travelling. This short-tailed bird he in-bred with his newly-manufactured Bantams, thereby giving their progeny the present form of the short tail.

"In the *Poultry Chronicle* it is stated that Sir John obtained a buff-coloured Bantam hen at Norwich; she was very small indeed, with clear slate-coloured legs. On the same journey he purchased a cock rather inclined to red in colour, destitute of sickle-feathers, with a hen-like hackle; and also, at Watford, a small hen resembling a Golden Hamburgh. He afterwards had a

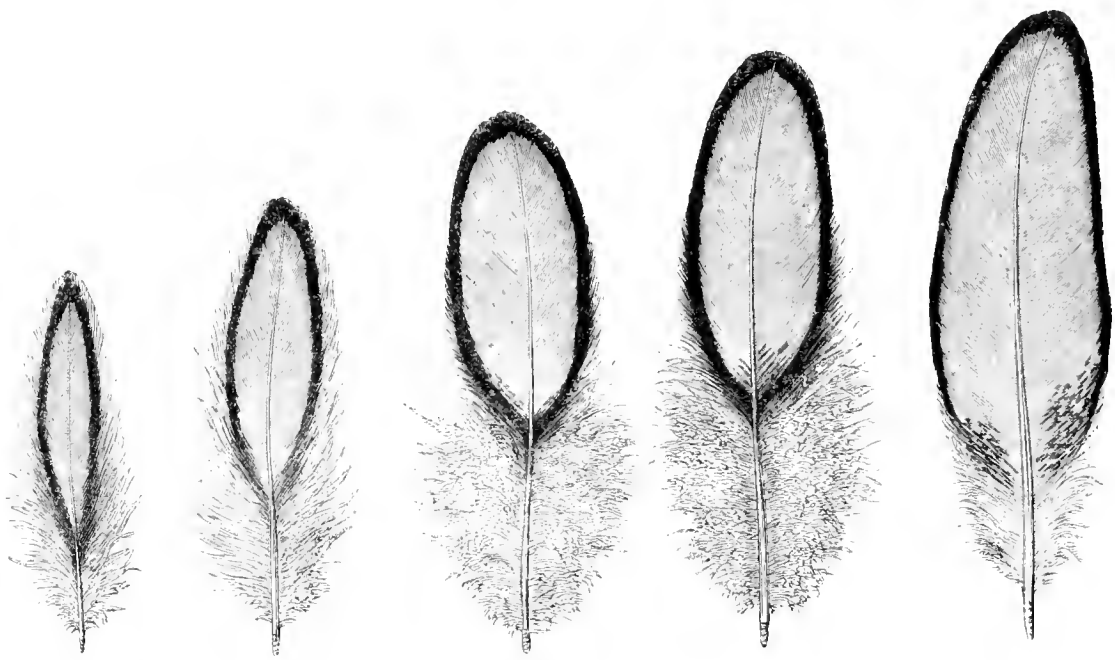
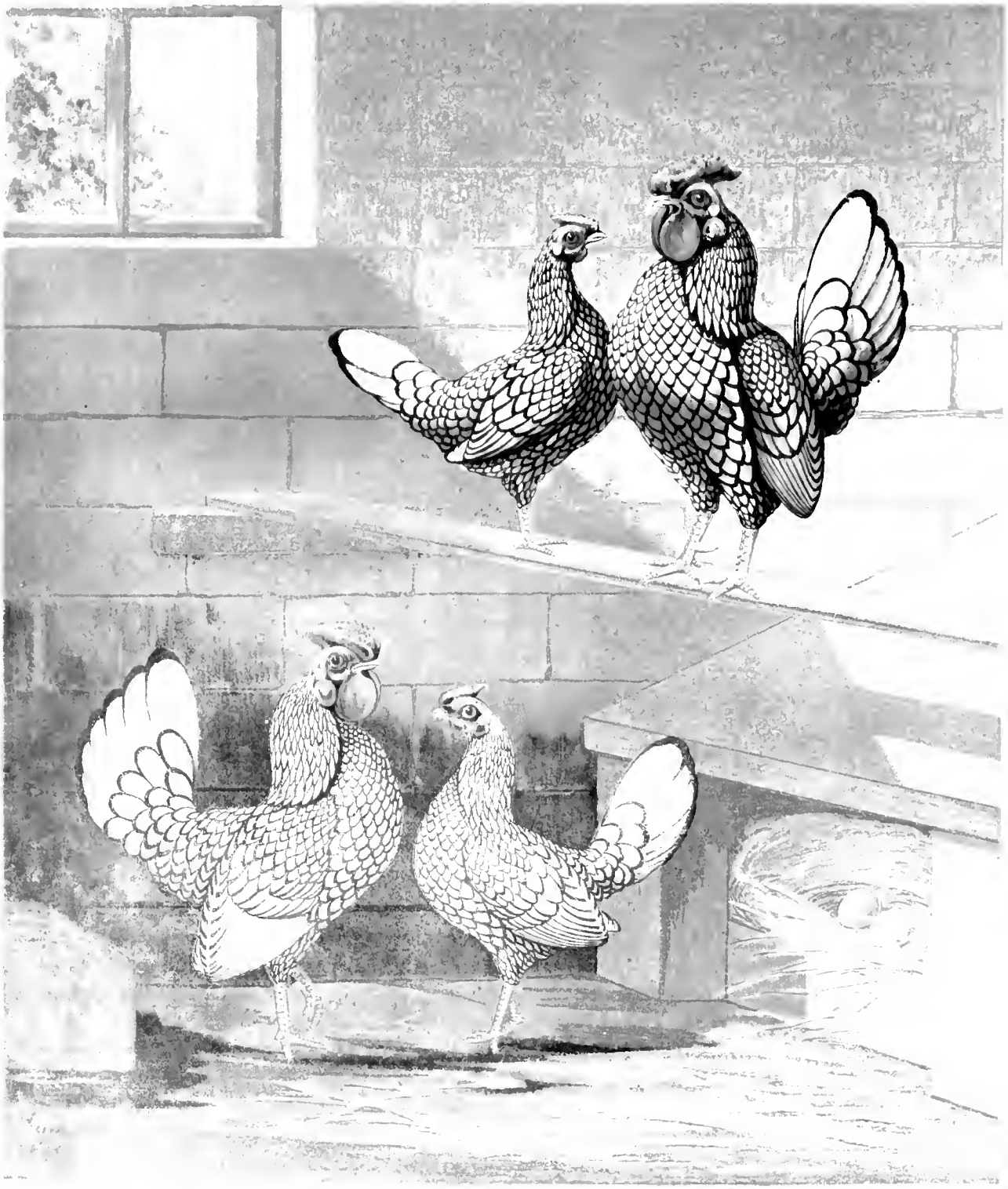


Fig. 97.

white cockerel from the Zoological Gardens, by which he made his Silvers. This description of the origin refers back before the laced marking was achieved. They were then known as Pheasant Bantams

"Sir John also established a club for the fostering and improvement of his pets. It is thus mentioned in the *Poultry Chronicle* of 1855. 'The Sebright Bantam Club was formed some forty years ago by the late Sir John S. Sebright and several other fanciers, who endeavoured, if possible, to obtain the beautiful plumage of the Polish fowl on as small specimens as could be. They (the late Sir John, the late Mr. Stevens, the late Mr. Hollingsworth, and Mr. Garle, who still survives) began their labours by selecting the best kinds for their purpose of the Polish, and, by judiciously crossing them with Bantams, gradually obtained their end. They had to work out the top-knots, get rid of the hackles and long tail-feathers, and reduce the size; retaining as much as possible the truly impertinent character of the Bantam. This has been most successfully accomplished, but not without the occasional recrossing with the Black Bantam, for the constant breeding in-and-in has often brought the birds to a stand-still. The club thus formed met annually, on the first



Tuesday in February, in Brick Lane, but has been of late years transferred to the Gray's Inn Coffee House, Holborn, where it has always been the custom to admit strangers, on application, after the award of the judges. The club is essentially private, and all members must be proposed and seconded by a member, and afterwards ballotted for. The annual subscription for the Golden is two guineas, and the same for the Silvers, which forms the amount of prizes. Each bird must be the *bonâ-fide* property of the exhibitor, bred by him, and under a year old. The cocks are allowed twenty-two ounces, the hens eighteen ounces. The cocks must have no long hackles, no saddle-feathers, no streamers in the tail; they must have rose-combs, short backs, heads and tails approximating; their ground colour, whether Gold or Silver, must be clear, and every feather delicately laced (never spotted) with pure black. The tail-feathers should form no exception in their lacing (but this will be very seldom seen), and the bars on the wings should be black and distinct. The same rule applies to the hens.'"

The Laced Bantam is of two varieties, called respectively Gold and Silver, from the ground colour of the plumage, which should be a golden-bay in one case and clear white in the other. In perfect specimens *every feather*, including the neck-hackles (or rather feathers, for the cock has no true hackles), the wing-secondaries, the tail-feathers, in fact with no exceptions whatever except

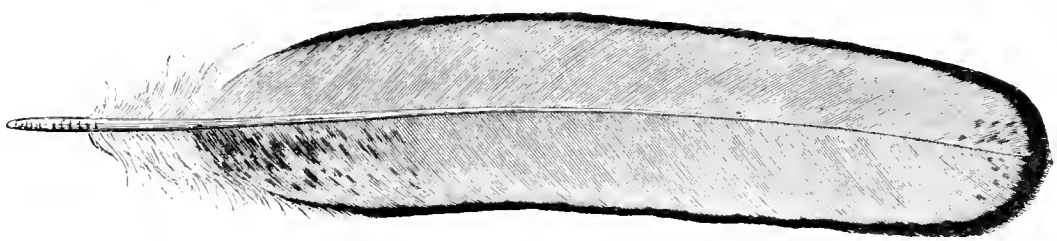


Fig. 98.—Tail-feather of Laced Bantam.

the primary quills or flights, which are not seen, is laced or margined all round with black, as shown in Fig. 97. The accuracy of this marking in good birds is extraordinary and produces a most beautiful effect. The flights in Golden birds are usually of a darker shade in the ground colour, with sometimes a little grey shading on the inner web, and almost always a little lacing towards the end, but rarely more. In Silvers, the primaries usually show rather more black or grey. The feathers most apt to fail in lacing are those of the tail. We have seen birds laced perfectly even here, but almost always the lacing of the tail-feathers is rather thin up the sides, as in the tail-feather shown in Fig. 98, which is plucked, as were the others, from one of Mr. Leno's birds. Such a tail as here drawn would be considered very good indeed; and it is regarded as allowable for an otherwise excellent bird to have the tail-feathers only nicely tipped, but the farther the marking extends up the sides of the feather the better.

The Sebright Bantam has a rose-comb, which should be as neat as possible, though this is always a difficult point. The comb, wattles, and face are of a purple or livid colour, and the deaf-ears are *supposed* to be white, but it is more than doubtful if such were ever yet seen on good specimens. So long ago as 1853, Mr. Hewitt, at that time a celebrated breeder of Sebright Bantams, wrote on this point in Messrs. Wingfield and Johnson's "Poultry Book:"—"In the Sebright Laced Bantams, I have yet to see a specimen in which the ear-lobe is perfectly white; for although so many have been bred by myself in the last twenty years, all that I have yet had were *blushed*, and many perfectly red in the ear-lobe. I freely admit that I should prefer the white, but feel confident that it is not to be generally, if ever, obtained. I have also invariably noticed that any

unusual whiteness in the ear-lobe is accompanied by a sad falling-off in the lacing ; and, therefore, if attainable only at so great a cost, it must not be insisted on." Twenty years more of experience has only confirmed this, and even made the ear-lobes redder than ever; since, when Mr. Hewitt wrote, bluish ears were perhaps the rule rather than the exception, whereas now those of many prize birds are perfectly red. This does not arise from any necessary connection between white ears and bad lacing, but from the extreme barrenness of Sebright stock making the number reared so very small that in the vast majority of cases, when the few well-laced birds have been selected, there are among them no good lobes to choose from ; and hence, as lacing *must* be had, the ear-lobe has to be sacrificed.

The Sebright cock must be perfectly hen-tailed, and indeed hen-feathered in every respect, his neck and saddle-feathers precisely resembling those of the hen, and being laced, not on any account striped, with black. His carriage is the extreme of self-importance, strutting as he does on tip-toe, with the head thrown back and tail cocked up, so as often to meet together, the wings being carried low, so that the points in some birds almost touch the ground. The legs are dark leaden blue, and perfectly clean.

Another very peculiar characteristic of highly-bred Sebright Bantams appears to have been hitherto overlooked by all writers on poultry. We are indebted for it, as for so many other valuable contributions to this work, to Mr. Hewitt; and it is worth especial notice, as a most singular additional instance of what Mr. Darwin has called "analagous variation," or the tendency to develop *similar* characteristics among species widely distinct—in this case so wide apart as poultry and pigeons.

"In the Sebright Bantams exhibited by myself and others at all our earliest Birmingham shows," says Mr. Hewitt, "a very pleasing peculiarity existed, that is seen but rarely among those of the present day. When under alarm, closely-bred Sebrights possess a characteristic never seen in other poultry. The head is thrown far back, and the tail being at the same moment greatly raised, they all but touch each other. The wings drop suddenly, so far as to show distinctly every marking below the saddle-feather, which markings are never found perfect, except in decidedly good birds of this description. The greatest peculiarity is, however, yet to be stated. When so startled, not only do they thus assume much of the shape, for the time being, of the fan-tail pigeon, but also the singular *tremulous motion of the neck and head*, so characteristic in that variety of pigeon, becomes perfectly developed in the Sebright, and aids greatly to expose the all-important feature of well-laced neck-hackle, for which laced Bantams are so highly prized."

The great difficulty in breeding Sebright Bantams is their extreme sterility, to which we have already alluded. This has not only often threatened the actual extinction of the breed (for it has more than once happened that not one chick has hatched out of several hundreds of eggs set), but makes it very difficult, as just remarked, to attain a high standard, since there are not adequate numbers from which to make that selection of stock which is the very foundation of the breeder's art. Hence many strains have "run out" of lacing, as it is called; that is, the lacing has in successive generations faded away, till nothing was left but buff-coloured birds with a few indistinct markings here and there. The cause of such sterility has been differently stated, though the differences are found more apparent than real, and on further examination come practically to one point. Thus, Mr. Hewitt attributes it to the hen-tailed character, and states that he has found even so much departure from this as the elongation by half an inch of the upper feathers of the cock's tail improve matters much. That this can scarcely be the ultimate cause, however, is almost proved by an exception he himself mentions, that of a cock perfect in tail which was as prolific as any ; moreover, we have before seen that hen-feathering in other breeds

does not necessarily involve this consequence, though it is remarkable that in the most *closely-bred* variety—the Lancashire Mooney—which Mr. Beldon has stated to have been in his opinion perfected by close breeding out of the Yorkshire Pheasant, many sterile cocks were found. This in fact seems the real clue, and if we regard the hen-tail in this case as one of the signs of close breeding, all seems accounted for. The origin of the Laced Bantam we have already seen to have been almost as complex as that of Dr. Bennett's "Plymouth Rocks," for the truth of the account we have quoted is manifest on its very face; and, indeed, a simple comparison of the drawings of Sebright feathers with those of the Polish fowls previously given would of itself show conclusively where the lacing came from. Now a breed formed by such complex crosses can only be preserved by close in-breeding of the most severe character—far more severe than anything we have advised in other parts of this work—and there are few opportunities to get fresh blood. Add to this that the *smallest* and therefore weakest birds were selected, and the progress of sterility is only too satisfactorily accounted for.

We have seen that long ago a cross with the Black Bantam was employed to remedy these growing evils, and it has been more than suspected that modern breeders have used the same expedient, though in some quarters it has been denied. The following interesting notes on Sebright Bantams, from the most successful breeder of the present day, Mr. Matthew Leno, of Dunstable, will however remove all doubt on this point.

"The breeding of the beautiful Gold and Silver Sebright (or Laced) Bantam, has from my youth greatly engrossed my attention. My commencement with the above was a present from the late Sir Thomas G. S. Sebright, Bart., of a trio of very beautiful birds; this was about two years after the decease of the original producer of the Laced Bantam, viz., Sir John Sebright, Bart., and I assure you it was no small pleasure to find on my arrival at home one day such an unlooked-for present. Poultry-shows shortly after becoming very popular, I tried my hand at exhibiting them, and was successful in my first attempt, which prompted me to give my first fancy poultry every attention; and I think I may be excused a little boasting in saying that I have successfully exhibited the Laced Bantam ever since at most of the principal poultry exhibitions in the kingdom.

"It is a well-known fact that the lacing of the Sebright Bantam is very difficult to keep together; I find on breeding them with clear tails, that the lacing on the breast and shoulders is mostly very indifferent. I have bred some of my best for evenness of lacing by introducing occasionally a Black Bantam cock to Laced hens, and in succeeding years breeding from the best cross-bred cockerel with Laced hens having no such stain amongst them. It takes several years to get the lacing good afterwards, but some of my best exhibition birds have been bred in the manner described; the Black Bantam causes the tails to come rather dark, but the lacing otherwise most perfect; the cross is also most useful in tending to make the Sebright Bantam more fertile. I have, in my earlier experience, had in some seasons only two or three chicks hatch out of as many hundred eggs, but since I have introduced the cross named I get plenty of fertile eggs; and although the cross produces the cloudy tail, I am recompensed by the superior lacing obtained. The breeding of Gold and Silver separately should not always be followed, as the Gold birds' colouring becomes too red. The breeding of the two colours together generally yields some splendid birds; the produce will be both Gold and Silver, and not one in fifty will be half-and-half colour.

"They lay a large number of eggs, and are easily reared. It is a fact well-known to me that many chickens are killed by what I term 'too great kindness;' many commence to stuff them with too large a quantity of egg food. I use nothing but barley-meal, a sprinkling of oatmeal, and

Dear's Game and Poultry Food, and a very small portion of custard, mixed together in a crumbly paste. The custard is made of new milk and eggs, in proportion five or six eggs to half a pint of milk; the milk should be boiled in a kettle something after the fashion of a glue-pot. The milk being surrounded by water prevents it burning, which would prove very injurious to the chicks; the eggs, after being beaten up, should be added when the milk is boiling, and frequently stirred. In a short time a nice thick custard is formed, which, after a slow boiling, should be turned out into a hair sieve to thoroughly drain the whey out before using. I never use more than four or five eggs daily to every hundred chicks; clean well-water always by them.

"Just a hint as regards Laced Bantams for breeding purposes: the cockerels should have a very slightly sickle-feathered tail, *perfectly hen-tailed* birds being often very unprolific."

It will be observed that Mr. Leno, like Mr. Hewitt, remarks on the frequently sterile character of perfectly hen-tailed birds; though we must add that we have heard from other breeders of cocks perfect in this respect, which were as prolific as could be desired. Much depends on the run, the general management, and the degree to which the birds are exhibited, specimens frequently shown almost always proving sterile in this breed.

With regard to breeding Sebrights, very little can be added to the preceding remarks. In the old "Poultry Book"* to which we have already referred, Mr. Hewitt makes three observations which we have every reason, from inquiry, to believe are still true. The first is, that in their third year many birds become grizzled with white, and consequently unfitted for exhibition. "Frequently, however," he says, "have I found that in this state they produce stock far superior to those that have been reared from these same birds in their pristine beauty." The second is, that the best chickens are generally produced when the parents are over-sized; which will be found probable enough when the superior vigour of such parents is considered. The third is, that he generally found his best-laced birds were bred from parents one of which was *very heavily* laced, while the other was scarcely sufficiently so. "Why this should be," he says, "I know not, but I am confident that those that are best laced frequently produce offspring that are far from perfect in their markings; while those exhibited by myself, which have so often proved successful, were bred as before stated." We may add that it is desirable to choose a breeding cock whose comb is as *bright* as possible. We are not aware, in fact, that the livid comb is considered a particular merit in any case, and if dark-coloured birds on both sides be bred from, it is apt to become almost black. A neat comb is a great point, but rather rare of late, most of the combs now shown being low behind, instead of the pike pointing rather upwards as in Hamburghs, which it should do.

As to breeding the two varieties together, we have no doubt that it improves hardiness and fertility, and is of occasional benefit to the Gold; but we feel equally little doubt that it has ruined the Silvers. Until last season (1872) we had not seen a pen of *real* Silvers for years, those so-called being simply bad-coloured pale gold; and in one case we actually saw two pens side by side, one of which was called Silver and the other Golden, with scarcely a shade between them. This might be a mistake, of course, though we much doubt it. We had began to think the beautiful Silver-laced Bantam was altogether lost, when we heard from an old friend that two splendid pens had been sent to a Scotch show; and at the Bristol show soon after we saw ourselves two pens, the ground-colour of which was as white and clear as the paper on which this work is printed. So singular was the coincidence that we thought the Scotch pens must have been purchased by the English exhibitor, and were much gratified to find this was not the case, but that there were *two* yards which still possessed genuine Silver-laced Bantams. That crossing such birds with Golden often

* "The Poultry Book," by Messrs. Wingfield and Johnson, 1853, pp. 200, 201.

produces at first pure-coloured chicks of both varieties we quite admit; but the stain gradually "works in," and ultimately the Silver is lost. Sad experience proves this, and hence, while it is admissible to cross from the Silver occasionally to improve the Golden, the Silver birds thus produced, though they may be exhibited, should not be allowed to breed with any pure Silver strain.

NANKIN BANTAMS.—This is one of the most ancient breeds of Bantams, and probably the parent, or rather one of the parents, of many other breeds, formed by crossing it with different races of large poultry. It is still sometimes seen at shows (two fine hens were shown at Birmingham a few years back), but rarely takes prizes, being almost always larger than other varieties, which of course is a great disadvantage. We kept a hen of this variety when at school and she proved a first-rate layer, quite equal in number of eggs to any barn-door fowl.

In this variety of Bantam the colour of the hen closely resembles that of the Buff Cochin, the hackle being darker, and sometimes spotted with black, and the tail usually tipped with black. The cock's general colour is more of a chestnut on the upper parts, or rather very dark orange gold, like a very dark Buff Cochin, the tail being glossy black, and of a good full sweeping character. The legs are dark and smooth. The combs are met with both single and rose.

Mr. Oliver E. Cresswell brought this Bantam again into notice by a beautiful pen exhibited at the Crystal Palace "Bantam" Show of 1872, and has at present a fine yard of them. He has at our request kindly added the following more detailed description:—

"This lovely breed of Bantams has been sorely neglected of late, but I do not think any catalogue of Bantams complete without mention of them. There are those, though not among the class of exhibitors, who, knowing their beauty and merits, have kept and bred them carefully through a long series of years; and excellent specimens may sometimes be seen at gamekeepers' cottages in remote districts, where they have long been kept as foster-parents to partridges. The remembrance of a lovely little hen I possessed years ago, and the desire, common to most enthusiastic fanciers, to keep some breed different to one's neighbours, induced me to hunt for them. I obtained my first stock from two distant counties, and from their union bred the birds which took first prize at the Crystal Palace Bantam Show, and I shall be only too pleased if fanciers can be persuaded to follow my example, and, hunting up good birds where they are little cared for, will attempt to breed them to a definite standard of beauty.

"Their points, subject to correction from more competent judges, I consider to be, first—size as small as possible; second, combs single or double (I prefer the latter, but am told that the best Nankins of thirty years ago had single combs); third, legs blue or white. The former are preferable, but I find them difficult to obtain, as the birds of one of my original stocks were white-legged. As long as all the birds in a pen match in colour of legs I do not consider the colour itself an essential point.

"The cock has an amusing and conceited gait, with flowing sickle-tail, and wings almost sweeping the ground. His breast and body are of a deep ginger-colour; the back, wing-coverts, neck and saddle-hackles a rich orange or chestnut; the tail chestnut or copper, shading into black.

"The hen's general colour is a clear buff, like that of a Buff Cochin. In some birds it is of a ginger, in others of a canary hue, with neck-hackles as free as possible from dark lacing. The tail is brown, shading into black towards the end. The unseen half of the primary wing-feathers is often, as well as in the cock, black.

"Nankins are the most tameable and engaging of Bantams, excellent layers of large eggs for their size, and the most careful mothers."

This variety breeds pretty true with little trouble, but it is so little kept that we can give no detailed instructions. Indeed, it will be seen that some points can scarcely be regarded as fixed. The name is supposed to have been given from the resemblance of the colour to that of nankeen piece goods. We have often thought that by crossing this variety with Gold-pencilled Hamburghs, a very pretty and very small Pencilled Bantam might be produced with little difficulty.

WHITE BANTAMS.—The White Bantam usually shown exactly resembles the rose-combed Black breed in all but plumage, having dark legs, red face, and white ear-lobes; at least this is the accepted standard of English breeders. But we repeat a remark made by us many years ago, that the white ear-lobe is far inferior in appearance to red, the white plumage seeming to require this contrast, and the white deaf-ear looking sickly in comparison. In America the red deaf-ear is considered the correct colour, our Transatlantic brother-fanciers showing in this particular a sounder appreciation of æsthetic beauty. In all other respects, allowing for the difference in plumage, our remarks upon Black Bantams will apply to this breed.

There is another beautiful breed—one of the oldest known—which we wish to see more cultivated. We refer to the exquisite White Booted Bantam. This quaint little fowl only requires to be known to be loved. The following notes on this variety are from Mr. R. S. S. Woodgate, of Tunbridge Wells, who informs us that he was led to cultivate the breed by a casual remark of our own to the above effect in a poultry periodical, and finds our praise (we kept them when at school) more than borne out in every particular.

"White Booted Bantams," he says, "are perhaps the tamest and hardiest of all our Bantams. An erroneous idea is afloat that all white breeds are delicate, but as I have devoted myself to breeds of this colour for many years I can distinctly deny it. To any one who has a garden, with the smallest possible bit of green, and wants a few birds for amusement only, and prefers even a smaller breed than Silkies, I recommend this little variety; they are very tame, very hardy, and so happy in their dispositions. Then they are the gamest little fellows imaginable; pick up a cock from the yard, and he will crow in your very hands in the most defiant way.

"This variety is very prolific, though the eggs are not much larger than pigeons' eggs; and the hens make admirable sitters and mothers; but sometimes the length of their hocks makes them roll the eggs from the nest when leaving it. Three little hens I now have with their chickens are making the most exemplary mothers.

"White Booted Bantams should be as small as possible, though we do not at present see them so small as the generality of Bantams as a rule. They should have white legs and bills, and be heavily booted and hocked; the more feathering on their legs and feet the better. The cocks should have nice full-sickled tails, and be firmly and closely made. There are both single and double combs, but personally I much prefer the single, and believe that to be correct, they lose so much of their peculiar appearance with the double comb. The single comb is, however, difficult to get good, so many have "thumb-marks," as they are called—a kind of wave in the front of the comb; but I would never be too quick at discarding a bird for this failing, as sometimes the comb comes right when the bird gets older. The hen's comb should be nicely serrated, upright, and not too large; those lopping over are most objectionable.

"This breed has one drawback to which all white breeds are liable, namely, getting sunburnt. When kept in an exposed sunny place the hackles turn yellow, like White Cochins, which is a great impediment to successful exhibition. I can only recommend the shade of living underwood and trees to ward off this, which does not generally appear the first summer.

"This is a very old-fashioned breed of Bantams, though we do not see many of them now;

but they only want hunting up, and a class or two offered for them, to appear in the same numbers as the other varieties. For exhibition they only want to be sent out quite clean, but in washing them great care must be taken, or they will be overcome by their bath, and soon die. Their heads should never be put under water under any circumstances."

We can fully subscribe to all the above, though we doubt the possibility of getting up classes for this beautiful breed. The better plan, in our opinion, would be, instead of offering prizes as usual at present, to Black and White Bantams "clean-legged" only, to extend each class to "any variety (*i.e.*, of Black or White respectively) except Game," thus throwing each colour open to clean or booted legs. There used to be a Black Booted Bantam also, and such a course might possibly effect its resuscitation.

We need only add that the Booted Bantam does little injury in the garden at any time of year. We doubt, in fact, if it does any; the long feather on the legs appearing almost, if not altogether, to prevent its scratching. This point may be a strong recommendation to some, who dislike keeping their pets confined; cannot afford a good open run; like to see their gardens tidy; and yet—inconsistent mortals—*want to keep fowls*. These are the very birds for them; and no prettier sight can be imagined than half a dozen of these little snowballs walking about among the flower-beds, and when called, standing still to cock their heads at their owner just like pet canaries.

When at Mr. Beldon's, in 1871, we saw some White Booted Bantams, which rather differed from those already described. They had been imported from Germany, and in addition to the vulture-hocks and feathered legs, had good muffs or whiskers, which gave a very quaint appearance. The combs were of a small and neat Cochin shape, while the short legs, fluff, broad saddles, and small tails, all partook of the Cochin or Pekin Bantam type. These, too, were somewhat larger than other Bantams, but might easily be bred smaller, and no doubt would be supported if better known.

Mr. Hewitt has kindly added the following description of a breed of Bantams which used to be shown years ago, but is now, we fear, extinct. It might perhaps be called the Booted Bantam, but that it differed widely from the white and black breeds now known by that name. Should it ever be recovered—and we hope this description of it may lead to such a result—it might perhaps be called the Vulture-hocked Bantam, or, from the resemblance of its beard and whiskers to the "Russian" fowl described in our last chapter, the name might be suggested of Russian Bantam.

"An exceedingly unique and hardy Bantam was some forty or fifty years back quite general, but of late years is rarely or ever seen. In colour they very closely resembled the Red Speckled Dorking, a breed also that is now, as I have said in the proper place, a rarity. In size they were much about that of the generality of Silky fowls, but from being very strongly framed birds, weighed much heavier than they appeared at first sight. They were very peculiar, having large rosy combs, combined with excessively developed beards and whiskers; they were long in the wing and tail-feathers; the wings drooped nearly to the ground; but the greatest novelty about the bird consisted in the extreme length of the hocks and leg-feathers. At the time I speak of poultry amateurs were few and far between, and some persons then denounced the 'hobby' as a folly. Still these Bantams had their firm friends even in those days, and we valued each bird according to its relative merits, by occasionally showing them against each other, simply for the love of superiority. The leg-feathers of both cocks and hens usually measured *six inches in length*, and I once knew a cock that always, when in full plumage, measured seven and a half inches in the leg-feather. An objection arose, however, from these leg-feathers being nearly as strong in the shafts as even the principal flight-feathers of the

same birds, for if they became accidentally injured before they were fully matured, an excessive amount of bleeding ensued, and not unfrequently a malformation of the feather resulted. The hock-feathers being equally stubborn, were generally much worn off at the tips, though even then always long enough to rest on the ground.

"In spite of this strange development of feather, which made them apparently awkward alike with eggs and young chickens, if not pestered by those who owned them, these Bantams managed to raise their broods as successfully as any others of the plain-legged varieties.

"Their flesh and skin was as white as the Dorking's, and of really good quality; but the peculiarity chiefly noticeable, as regards solid qualities, was that the eggs were as large as those of most common hens, and of an exceedingly deep brown tint in the shells. When broken for use the yolks were as deep-coloured as those of a Guinea Fowl. Being a really good fowl, it is much to be wished this breed of Bantams would turn up again, for no variety could breed more truly as to colour and character."

In rearing Bantams, the main point is, of course, to keep them *small*, and this is by no means easy. The difficulty is, that many Bantam breeds are somewhat delicate, and therefore the poor regimen that naturally occurs as the readiest means of accomplishing the desired object, is rather apt to kill them off on a more wholesale scale than is satisfactory either to the humanity or pecuniary prospects of the owner. Hence late hatching has been generally resorted to; but even this, besides having a somewhat similar effect, has been found in many cases to injure the development of the plumage in cockerels, especially stunting the tails, which spoils the look of a Bantam completely.

By the ingenuity and experience of breeders, however, all these difficulties have been overcome. It has been found possible to contrive really *good* feeding, which can be given freely, and which shall yet afford very little bone-making material; and that on the quantity of the latter, size chiefly depends. So much, in fact, would be inferred from former pages of this work, where we have pointed out the great effect of a judicious use of phosphates and of lime in increasing size; and the fact that "good feeding," as it is called, does not necessarily contain these elements may be demonstrated with equal readiness. To use only one apt illustration—the average Englishman is always held to feed "better" than the Scotchman, using as he does the best white flour and a large quantity of animal food; yet the Scotchman, as a rule, attains a larger stature, because his national food contains a good proportion of bone-forming substances. In this way, therefore, breeders have accomplished the desired object; and it has also been found that upon such nourishing, though not bone-making, food, even late-hatched birds will feather well and fully.

Different breeders have their various food recipes to accomplish these ends, which are often kept as secrets, and most jealously guarded; but Mr. E. Hutton, of Pudsey, Leeds, whose remarks on Black Bantams we have already given, has most kindly and fully placed his own method and experience at our disposal. It will have been noticed that in his previous notes he speaks of reducing the size of his birds by "feeding on diet specially adapted for that purpose;" and the extreme smallness of many of the birds shown by him, notwithstanding the well-known and apparently contradictory *hardiness* of his strain, are conclusive proofs of the success of his method. We may give this very shortly in his own words:—

"In reducing the size of my Bantams, the special food I have referred to as used by me is as follows: For hard grain I employ good sound wheat, with a little canary seed about twice a week, by way of a change. For soft food the first meal was invariably boiled milk-sops, and during the remainder of the day a preparation made as follows: Rice, most thoroughly boiled in water, had a

little dripping added to it, and was spiced with pimento, and when quite cold I added a small portion of finely-ground oatmeal, the rice forming nice pellets, to which the oatmeal adhered when it was thrown on the ground. This, although very high feeding, supplied little bone-forming substance; and though the chicks remained small, they feathered well, and I have often had early-bred pullets laying at the age of sixteen weeks."

The regimen here described may of course be applied to any breed of Bantams. Stimulating and nourishing as it is, Mr. Hutton is quite correct in stating that upon the whole it contains little bone-forming substance, the only ingredient at all rich in this being the little oatmeal which adheres to the rice; rice itself being practically destitute of such ingredients, and also the bread and milk, except what the milk contains—an almost infinitesimal quantity. Yet, while possessing these desirable qualities, it is rich and stimulating enough to carry the most delicate breed through either late or early seasons without difficulty.

The best mothers for Bantam chicks are either birds of their own breeds or Silky hens.

JUDGING BANTAMS.—In most breeds of Bantams there are certain points, such as the ear-lobes in Blacks, or the lacing and hen-tail in Sebrights, which are regarded as essential, and require primary attention at the hands, or rather the eyes, of the judge; but beyond these a *general* neatness and smartness of carriage and "make-up" are especially to be considered. The reason for this is very manifest. Bantams being—whatever their practical merits may be—regarded exclusively as ornamental poultry, the general effect to the eye, so far as compatible with what may be the conventional standard of the particular breed itself, has perhaps more weight than in any other variety of fowl.

In connection with this point, and to avoid serious mistakes and consequent disappointment on the part of many amateurs, it is absolutely necessary to state that the so-called "Standard of Excellence" is, as regards Bantams, utterly unreliable and worthless. In all the scales for Bantam breeds treated of in that work there is a limit of weight given for each sex, beyond which the birds are stated to be "disqualified," that is, *ipso facto* thrown out even of competition. In the case of cocks, the limit is fixed as follows: Game Bantams, twenty-four ounces; Sebrights, twenty ounces; Black or White Bantams, twenty ounces; excess over these weights being "disqualification." We have not the slightest hesitation in affirming that not only is this not the case, but that it *has never been so* amongst recognised English judges; whilst it would both destroy all correct and acknowledged Bantam judging, and disqualify far more than half of the most celebrated winning birds. Nothing could more strongly show the absurdity we have before pointed out of merely empirical scales. So palpably true is what we state, that in the American "Standard," which usually follows the work named most closely, the limit of weight has perforce been extended—in the case of Sebright cocks no less than four ounces; but even that, or any other absolute limit whatever, cannot be maintained. We ought to state that we are not expressing a mere opinion on this matter, which might differ from that of one holding different views; it is a simple matter of fact, and we speak from actual test—as applied to awards by every judge at all recognised in the poultry world. Bantams are never actually weighed now in competition; but by the courtesy of committees we have been allowed to ascertain and compare actual weights after some awards; we have been allowed to weigh other well-known birds in "their native home;" and in countless other cases we have estimated the weights by hand (and our hand has been acknowledged to be pretty accurate); and the result is, that the exceptions to the stated limit of weight are considerably more than the cases which fall within it; and not only so, but as a rule comprise the very best birds. The rule is wrong even in principle; for it is *apparent* size and not mere weight the

judge has to consider, and a really small and small-looking bird, if in hard condition and health, will *weigh* more, for that very reason, than a far larger bird in poor health and loose feather. Especially is this the case with Game Bantams, as we have proved by experiment. We have taken an exquisite cup bird from his pen and found him weigh twenty-six ounces, while his next-door neighbour weighed only twenty-one and a half; yet the last bird was half as large again as the legitimate winner, and bad every way. By such an empirical scale the winning bird—all but perfect, and a gem even of smallness in spite of his weight—must have been disqualified in favour of the great loose-feathered brute which yet came within the scales. Weight is, in fact, no criterion whatever; and even size, which is, is only *one* of the points to be considered, and no absolute limit can be laid down for it.

So important is this subject—we should not have written so strongly upon it else—that we think it right to state we have submitted our views upon it to Mr. Hewitt; and that most eminent judge—who has had far more experience than all others put together—not only permits us to state that he fully agrees with the views we have expressed, but has kindly added the following remarks of his own upon this and other kindred points.

"In the judging of Bantams, a rigidly-enforced rule as to weight should not be relied upon. What judges should require is, high condition, neatness, and afterwards as small size as we can get them. If a fixed standard weight alone is applied to Game (or other) Bantams, it will frequently be found that a first-rate trim specimen, the very embodiment of a true Game cock, size excepted, and which, seen in the pen, from being whip-tailed, and so close and hard-feathered, looks quite a small bird, still when weighed, from being 'hard as nails' and full of condition, weighs an ounce or two more than the prescribed standard, and would have to succumb to some loose-feathered opponent, that owes his present lucky deficiency of weight entirely to want of condition, bringing him within such an unchanging regulation. Every practical judge of a real Game cock knows that the greatest amount of muscle, and consequently power, in the closest framework is, if combined with smartness and agility, the desideratum; and as the Game Bantam should be simply the miniature likeness of the true Game cock, *form and quality*, and not closely restrictive *weight*, should determine the prizes. In short, what is wanted in all Bantams is neatness, form, smartness, quality, and then the smallest size procurable.

"As to weighing every Bantam at our present shows, the time appointed for the judging proves an entire prohibition, as committees, always considering shows must be self-supporting to be permanent, could not entail the expense of more judges than customary. In years long past, before the institution of the Birmingham poultry shows, when a few of us used to meet at intervals to pass a social evening, and criticise to the utmost every characteristic of perhaps at most some half-dozen Sebright Bantams, and to descant severely on every shortcoming, scales were necessarily resorted to, as time was then no object, the whole evening being pre-arranged for the discussion of relative merits; but where shows, as now, of many hundreds of pens, have to be arbitrated in about the same time formerly devoted to the rigid scrutiny of at most a dozen single birds, the eye and the hand conjointly will give a much closer approximation to justly-appointed awards than reference to weights alone.

"Although quite digressive from the present subject of Bantams, I cannot but here briefly allude to matters from which those amateurs who have not already paid dearly for their experience may yet reap opportune advantage, as relating to the larger breeds of domestic poultry.

"I am perfectly satisfied that too general reference to weight alone, as the test of relative excellence by arbitration, when judging poultry, has ofttimes led to many difficulties and disappointments. My own impression has always been, an anxious purchaser should look for a

great development of frame and constitution, rather than unnatural obesity, as the latter invariably renders unfertile birds thus subjected to overfeeding.

"Hence it is that persons who have claimed at exhibitions the prize pens of geese, turkeys, and ducks, where weight alone has ruled the awards—at a price far beyond their real value—have afterwards found them perfectly useless as stock birds, and proved also to their increased mortification how impossible it was to make such poultry *retain* the weight at which these pens were originally exhibited. After their death, I have had the opportunity of examining the livers of many of these excessively-fed poultry, and found them not only of the colour, but also of the consistency, of new putty. Even, therefore, in cases where weight combined with size is admittedly most covetable, a fixed reference to scales only cannot by any means be desirable, or to be exclusively depended upon. As a friend jocularly remarked to me some years back, 'Then you mean to say, Mr. Hewitt, *size, not fat*, should rule the roast?' My answer is still—Decidedly so."

We cannot too emphatically endorse Mr. Hewitt's last remark, which may be usefully read in connection with what we have said upon the same subject at page 148 and elsewhere.

Our own schedules have been drawn up with care; and Bantams being shown much more than formerly, are more accurate than could have been the case some few years ago.

SCHEDULE FOR JUDGING BLACK AND WHITE (CLEAN-LEGGED) BANTAMS.

GENERAL CHARACTERISTICS.—Precisely resembling the Hamburgh fowl, but on a diminutive scale. Weight of cocks sixteen to twenty-two ounces; of hens, twelve to eighteen ounces.

COLOUR OF BLACK BANTAMS.—*In both Sexes*—Beak black, or dark horn-colour; comb, face, and wattles, deep rich red; deaf-ears brilliant white; eyes bright red; legs a deep leaden-blue, approaching black; plumage a deep rich black, brilliantly glossed with green.

COLOUR OF WHITE BANTAMS.—*In both Sexes*—Beak white; comb, face, and wattles, brilliant scarlet red; deaf-ears white for English shows, but red for American shows [red preferable for appearance]; eyes bright red; legs white, or pinky white; plumage a pure and spotless white, as free from sun-burn as possible. [Some consider black legs admissible, but most judges consider either black or yellow tantamount to disqualification].

VALUE OF DEFECTS IN JUDGING.

Points of Merit.		*Defects to be Deducted.*	
A bird, perfect in shape, style, colour, and condition, and not too large, to count in points	100	Bad comb	14
For an extra small bird, otherwise good, see Note [a].		Deaf-ear faulty in colour	16
		Bad colour plumage { in black	12
		Bad colour plumage { ,, white	18
		Squirrel-tail	15
		Too great size.	See Note [a]
		Want of general symmetry	15
		,, ,, condition.	15

[a] We have found, with birds in average condition, that eighteen ounces in cockerels and fifteen ounces in hens are what will fairly entitle birds to be called "perfect;" and about one point should be deducted for the first ounce over this, two points the second ounce, three points the third ounce, and so on, the deductions for every ounce to be reckoned *collectively*, or added together, while two points per ounce may be credited for less weights. But, as already observed, individual birds differ much, and it is the *apparent size usually denoted* by these weights, and not the weights themselves, that are to be considered by the judge.

DISQUALIFICATIONS.—Single combs; wry-tails or any other deformity; legs feathered, or any other colour than dark leaden-blue, black, or white, respectively; deaf-ears entirely of the colour excluded by the Schedule. Any fraudulent dyeing, dressing, or trimming.

SCHEDULE FOR JUDGING LACED BANTAMS.

GENERAL CHARACTERISTICS OF BOTH SEXES.—General appearance of head brisk and jaunty; beak rather short; comb double or rose, as neat as possible (most birds now shown have a clumsy comb, with the peak tending downward, which is very objectionable); wattles medium size, and well rounded; deaf-ears medium, and flat or free from folds; neck taper, and in the

cock carried very far back, or arched, but the plumage resembling the hen's, and quite free from true hackle-feathers. *Body*—General appearance compact, the back being very short, and the breast very full and prominent; the wings carried very low, those of the cock almost touching the ground. The cock's saddle-feathers resemble the hen's. *Legs and Feet*—Thighs and legs short, the shanks being slender, and perfectly free from feather. *Tail*—Rather large, that of the cock being perfectly square, or hen-shaped, but rather larger, and carried very high, so as nearly (often quite) to touch the back of his head. *Size*—The smaller the better, but cocks under twenty-two ounces and hens under sixteen ounces are now seldom seen. Formerly birds were shown much smaller than this, but the cocks have increased in size more than the hens. *General Shape*—Short and deep. *Carriage*—Extraordinarily vain and strutting in the cock; pert and inquisitive in the hen.

VALUE OF DEFECTS IN JUDGING.

Points of Merit.	
A bird, perfect in shape, style, colour, lacing, and condition, and not too large, to count in points	100
For an extra small bird, otherwise good, see Note [a].	

Defects to be Deducted.	
Bad comb	10
Imperfect lacing	21
Ground-colour imperfect in uniformity or purity, or sullied with grey	18
Tail grey, or imperfectly laced	6
Cock's tail not perfectly square [b]	10
Too great size	See Note [a]
Want of general symmetry	15
,, ,, condition	15

[a] With birds in average condition, cocks weighing twenty ounces and hens seventeen ounces to be considered perfect; over that weight, one point to be deducted for the first ounce, two points (in addition) for the second, &c., as in the previous scale. Under that weight, three points per ounce to be credited.

[b] This refers only to such slight elongation or curvature of the upper feathers as will not disqualify a bird from competition.

DISQUALIFICATIONS.—Sickles or hackles in the cock. Single combs. Legs any other colour than slaty-blue or black. Ground-colour conspicuously spotted, or entire absence of lacing on any visible feather. Wry-tails, or any other deformity. Any fraudulent dyeing, dressing, or trimming.

We had proceeded to frame other scales, but found on comparison that they resolved themselves into *the same* general elements; which is not to be wondered at, when it is considered that in most cases all other Bantams are shown together. The following general scale, then, will be found to judge all other Bantams with sufficient accuracy. The characteristics have been sufficiently described in the text, and in most cases, in fact, can scarcely be given with the minute accuracy possible in the Black, White, or Laced breeds.

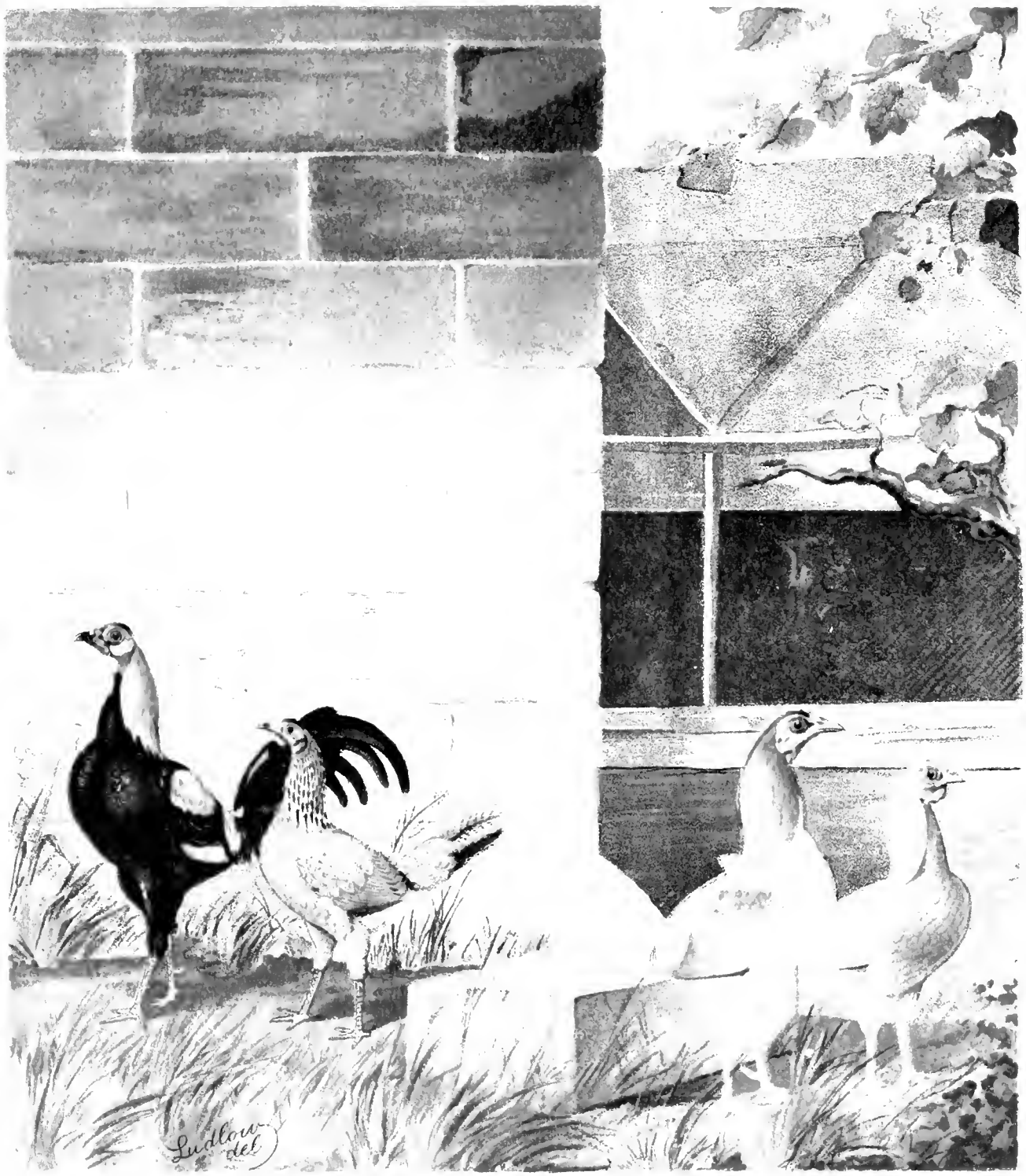
VALUE OF DEFECTS IN JUDGING OTHER BANTAMS.

Points of Merit.	
A bird, perfect in shape, style, colour, and condition, and not too large, to count in points	100
For an extra small bird, otherwise good, see Note [a].	

Defects to be Deducted.	
Faults in head and comb	12
,, deaf-ear (where important)	8
,, colour of plumage	21
Want of leg-feather (where required)	7
Bad shape or carriage of tail	15
Other faults in general symmetry	15
Too great size	See Note [a]
Want of condition	15

[a] Birds in average condition, not exceeding twenty-two ounces in cocks or eighteen ounces in hens, to be considered "perfect." Above that weight, deducting one point for the first ounce, two for the second (in addition), three for the third, &c. Under that weight, credit two points per ounce. It is, however, as in all cases, to be the *apparent sizes* of birds of such weights, in average condition, which are considered, and not merely absolute weight.

DISQUALIFICATIONS.—Wry-tails, or any other deformity. Foul-coloured feathers in black or white breeds, or white or black feathers in coloured breeds. Deaf-ears, combs, or legs not fairly in accordance with the accepted standard of the variety. Any fraudulent dyeing, dressing, or trimming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CHAPTER XXX.

GAME BANTAMS.

THE creation of Game Bantams is one of the most striking triumphs of the breeder's art, and the popularity of these graceful little birds has of late been somewhat extraordinary. This is no doubt owing in part to the much better quality of the specimens exhibited of late years, which are as different to those formerly shown as possible, presenting the fine outlines and plumage of the Game fowl in faultless perfection, with the diminutive size of the Bantam. This took a long time to acquire, and for many years stout stocky birds, with wings carried low, and spreading tails, had to be awarded prizes for want of better; but such specimens would stand no chance whatever now; the neat, light, whip-like figure of the true Game bird being quite indispensable to any chance of success. Most careful breeding is needful to secure this, with the necessary points in plumage and other respects; but we have been fortunate in obtaining such very full notes on these beautiful birds as leave no point untreated of on which information is needed by the fancier. The gentleman to whom Bantam breeders and ourselves alike are so much indebted, is Mr. W. F. Entwistle, of Westfield, near Bradford, Yorkshire, who writes as follows:—

"Game Bantams rank amongst the most beautiful of our ornamental fowls, and they are by no means unprofitable either as layers or for table use; for though small their flesh is most delicious, and they very early arrive at maturity. They are undoubtedly of English production, having been bred by crossing the English Game fowl with the Bantam, and selecting for future stock-birds those chickens which most closely resembled their Game parents, and by breeding in and in till the size was reduced to the desired point. Their good properties have rendered them such general favourites that they have become very plentiful throughout the United Kingdom, as well as on the Continent and the United States, to which they have been exported in considerable numbers.

"We have four leading varieties of Game Bantams, viz., Black-breasted Reds, Brown-breasted Reds, Duckwings, and Piles, or White-breasted Reds; and besides these there are White, Black, and Wheaten Game Bantams, the last-named being almost indispensable for the breeding of Black-breasted Reds and Duckwings. All Game Bantams should resemble the large Game fowls in everything except size; but the full-grown cock should not exceed twenty-six ounces, nor the hen twenty ounces when in condition for exhibition. In the laying season, a really good hen will often weigh more than twenty ounces, but she then looks clumsy and heavy, owing to the formation of eggs.

"In breeding Game Bantams, the great points to be aimed at are style, good feather, and colour. By style we mean general shape of the bird, and carriage of its head, wings, and tail. I will take shape first. The head should be very long, narrow, and gracefully curved; the neck long and slender; the shoulders broad and square; the chest broad; the body short and wedge-shaped, very fine and small at the tail-roots; the thighs well apart, rather long and well-rounded; the shanks long, straight, and slender; the toes long and well-spread, flat on the ground, the hind toe pointing exactly opposite the middle one, so as to give the bird a firm footing. If the hind toe

turns sideways or under the foot, the bird is said to be duck-footed, and is therefore considered worthless. The scales of the legs should be small and smooth, fitting close to the leg. The wings to be short, well-curved, and fitting close to the sides of the body, not drooping. The tail should consist of narrow hard feathers, and be carried at a very slight elevation, tightly closed, so as to give it a light graceful appearance. A wry-tail, *i.e.*, carried on one side, is of course a disqualification. The general appearance of the bird should be upright, bold, and fearless. As regards the second point, good feather, all the feathers should be sound, narrow, hard, and wiry, and lie as closely together as possible, so as to show the shape of the bird distinctly. In the cock the neck-hackles should be short and hard, not meeting in front of the breast nor covering the shoulders. The tail should be furnished with fine long narrow sickle-feathers. The following, though highly objectionable, are very common faults, and should be carefully guarded against: Short thick heads and necks, large crooked combs, white ear-lobes, short thick legs, long bodies, narrow chests, broad rumps, fanned tails, long drooping wings, long broad feathers, duck feet.

"The colour of the leading varieties is as follows:—The Black-breasted Red cock's face and head should be bright red; eyes vermilion red; beak dark greenish horn-colour; head and neck-hackle clear orange-red; back and wing-bow rich clear crimson, shading off to orange on the rump-hackles; wing-butts black; wing-bar steel-blue; flight-covert clear deep bay; breast, belly, thighs, and tail bluish black; legs and feet willow or olive-green.

"The hen's face, comb, ear-lobes, and wattles bright red; eye vermilion, to match the cock's; beak, legs, and feet to match the cock's; head and neck gold and black, the gold predominating, each feather having a golden shaft and broad margin, with narrow black stripes between; breast a rich salmon-red, the shaft of each feather one shade lighter; belly and thighs ashy grey, with a tinge of salmon-red; back and wings uniform light brown, or brownish drab, every feather being very finely pencilled with black, so evenly as at a little distance to appear only one shade deeper brown; tail black, the outer top-feathers finely pencilled with brown, to match the shade of the body.

"Faults to be avoided in the Black-breasted Reds are: In the cock, black stripes in the neck; black markings in the wing-bow; coloured feathers in the breast, belly, or thighs; red shafts in the tail-feathers; brownish or rusty bars. In the hen, large, uneven, or blotchy markings on the wings; red or yellow shading on the wings; too pale or too dark breasts. Yellow or daw eyes, and blue, white, or yellow legs are considered bad for exhibition birds of either sex.

"The Brown-breasted Red cock's face and head are a dark purplish red; eyes the darkest shade of brown; beak black; the head and neck-hackle are light orange, or brassy, striped with black towards the bottom; back and wing-bow rich orange, shading lighter towards the rump-hackles, which should match the neck-hackle; shoulder-butts greenish-black; wing-bars rich dark green; flight-coverts greenish black; breast dark brown, almost black, but each feather having a rich brown shaft and margin all round; belly and thighs dark brown, with a lighter brown streak down the shaft of the feathers; tail greenish black; legs and feet dark bronze, black, or olive-green.

"The hen's face, comb, wattles, and ear-lobes are dark purple, nearly black; eyes the darkest brown; beak black; head and neck black and gold, principally black, each feather being black, with a narrow gold edge; the breast black, every feather slightly edged with gold, and having a narrow gold shaft; back, wings, and tail greenish black; legs and feet to match the cock's—the darkest bronze is best.

"The Duckwing cock's face and head are bright red; eyes vermilion; beak greenish horn-colour; head and neck-feathers clear creamy white, or very pale straw-colour, free from black; back and wing-bow clear bright orange, shading into straw-colour on the rump-hackles; shoulder-

butts bluish-black; wing-bars steel-blue; secondaries clear white on lower web, with a small black spot on the end of each, forming a bar of black down the wing just above the white; breast, belly, thighs, and tail bluish-black; legs and feet willow-green. The Silver Duckwing cock is similar to the above, except in the following particulars: Hackle-feathers pure white, with slight stripes of black; back and wing-bow pure white.

"The Duckwing hen's face, comb, wattles, and ear-lobes are bright red; eyes vermilion; beak greenish horn; head and neck white and black (the centre and margin of each hackle-feather being white and the remainder black, the white should predominate); breast light salmon or fawn, each feather having a stripe one shade lighter down the shaft; thighs and belly ashy-grey; back and wings uniform light French grey, very evenly and finely pencilled with black, giving the whole a bluish-grey appearance; the shaft of each feather white; tail black, except the top outer-feathers, which should be finely pencilled with silvery grey; legs and feet willow-green. The Silver Duckwing hen differs from the above in being whiter in the neck, much paler in the breast, and lighter on the wings and back; altogether a lighter bird, and having a frosted appearance on the wings and back.

"The Red Pile cock's face and head are bright red; eyes vermilion; beak greenish-yellow if the legs are willow, clear yellow if the legs are yellow, fleshy white if the legs are white; head and neck-hackle deep orange-red, slightly striped with white towards the shoulders; back and wing-bow deep crimson, shading into orange-red on the rump-hackles, which should match the neck; shoulder-butts, breast, belly, and thighs creamy white; wing-bars and tail white; secondaries clear deep bay on lower webs; legs and feet willow, yellow, or white, but the yellow is to be preferred.

"The hen's face, comb, wattles, and ear-lobes are red; eyes vermilion; beak, legs, and feet to match the cock's; head and neck gold and white, the more golden the better, each feather having a white centre; breast deep salmon, with the shaft one shade lighter in each feather; belly and thighs shading off to creamy white, slightly marked with salmon; back and tail creamy white; wings creamy-white, with salmon-red markings on the wing-bow (this is called the 'rose,' and is greatly admired by many, though the clear white wing is preferred by others).

"Black Game Bantams are simply what their name implies, and need no further description. They are very rare, and are not encouraged at exhibitions, nor are the White, because neither of them are so striking or attractive as the Black or White Rose-combed Bantams.

"The term Wheaten applies properly to the hens, as the cocks to match them are the Black-breasted Reds and Duckwings. There are Red Wheatens and Grey Wheatens. The Red Wheaten hen's face, comb, wattles, and ear-lobes are red; eye vermilion; beak greenish-horn; head and neck-feathers clear golden yellow; breast a pale fawn or creamy-white; belly and thighs creamy-white; back and wings pale fawn or light-buff; tail black, the top outer-feathers may be edged with light buff or fawn; legs and feet light willow.' The Grey Wheaten hen corresponds with the above except in the head and neck, which are white, or white slightly striped with black towards the shoulders, but the freer from stripes the better.

"To breed good Game Bantams, select a cock and three or four hens from eighteen months to two years old, and put them together early in January. Use the first eggs laid, and commence setting your hens at the latter part of February, and they may be set with advantage until the beginning of June. Generally Game Bantam eggs will hatch on the nineteenth or twentieth day, if the hen is a good sitter. Her nest should be made of earth, and on the ground, and have a little hay or soft straw for a lining. In very hot and dry weather, a slight sprinkling of warm water two or three days before the eggs should hatch will do them good; but I do not favour the plan so

often recommended of sprinkling them daily under all circumstances. I hatch a great number every year, and only sprinkle the eggs in very dry hot weather; yet my average hatching is very good indeed.

"The chickens will not require food for the first twenty-four hours after hatching, but then should have custard made of eggs and milk, with a few bread-crumbs added. After three days give also a little canary-seed. After the fourteenth day give also the ordinary meal-dough made of equal parts of oatmeal and barley-meal, or 'fine sharps,' sometimes known as 'thirds.' The meal should be mixed into a crumbling consistency with good milk, and only sufficient made at once for half a day's feeding. A little at a time, frequently given, is the best rule for feeding chickens. The custard and canary-seed should be continued daily until the chicks are five weeks old; afterwards wheat may be substituted for canary-seed, and the meal-dough should be continued as usual. The hen may, with advantage in most cases, be confined under a coop until the chicks are six weeks old, to prevent her rambling too far, and so losing her brood. The chickens should be able easily to pass in and out of the croop between the front bars, and should have constant access to grass, fresh earth, and fresh water.

"When the chickens are three months old, it is a good plan to remove the cockerels from the pullets, keeping each sex separately. This prevents a good deal of fighting, and preserves the pullets' feathers from being spoiled by breaking, &c. Cockerels should not be dubbed until they have acquired full feather, which is usually at six or seven months old. To perform this operation properly, a steady hand and sharp, short-bladed scissors are necessary. An assistant should hold the bird firmly with its legs tied. The operator, having at hand a sponge and cold water, should commence by cutting off each ear-lobe, leaving no loose skin; then cut off the wattles, each one separately, and being careful not to remove the skin of the face between the ear-lobes and the wattles, nor to cut away the skin from the throat between the wattles. This is often done, but is quite unnecessary, and indeed a decided disadvantage, as it often spoils the bird's hackle by bringing it too forward, and the bird takes double the time to get ready for showing. Next and last, cut off the comb close to the head from back to front. By now sponging the bird's head any little bits left on may be seen and removed, and nothing more is required than to touch the scars with fresh lard the day following the cutting.

"When the hens' ear-lobes are white, it is usual to cut them off if the birds are intended for exhibition; but it is far better to *breed* them with small, perfectly red ear-lobes, and this may be done by care in selecting the brood stock, and for pullet-breeding using only birds with small, fine, straight combs, and smooth, red ear-lobes. These remarks apply equally to the brood cock and the hens.

"I will now describe the proper selection of brood stock very carefully in detail, for the production of exhibition birds.

"To breed Black-breasted Red cocks, choose a Black-breasted Red cock about two years old, having all the points you require in the cockerels, particularly long head, neck, and legs, short body and wings, broad chest, fine tail, perfect colour, hard feather. Also two hens of the same age, of the Red Wheaten colour. In shape and hardness of feather these are generally superior to the Partridge-feathered hens. Look especially for fine long heads and necks, clear full eyes, sound feet, good feather, broad shoulders and chests, fine sterns, hard wiry tails, well carried back.

"For Black-breasted Red pullets, select a cock about two years old, one shade darker in colour than the bird used for cock breeding, and slightly striped with black in the hackles; perfect in shape and style. If possible, choose one that has *not* been dubbed, and see that you have in him a very small, straight, erect comb, finely serrated, also very small and *perfectly red* ear-lobes. If

there is any white in the cock's ear-lobes, you may expect to see it reproduced at least fourfold worse in the pullets from him ; and a faulty comb in the cock should at once decide against him as a stock bird for pullets. I would particularly insist on the necessity of having a fine head and smooth face, with small comb and ear-lobes, in both the cock and hen from which to breed pullets, of whatever colour. Choose, then, two or three hens, each possessing the points you want in the pullets, and all being as much alike as possible in colour and markings, and commence setting their eggs a month later than those from which you desire cockerels, because it is always better *to show pullets at least a month younger than cockerels.*

"To breed the best Brown-breasted Red cockerels, secure a cock not over two years old, good in all the standard properties, and especially in the dark face, dark eye, and clearly-marked breast and general colour throughout. The *colour* of the cock is a very important point in the bird from which you wish to breed cockerels, as is also the shape of the hen. Put two hens with him of the standard colour, specially selecting them for shape, fine heads, and good brassy hackles, with clearly-marked breasts, but *as black in breast as you can get them,* so long as they have well-defined lacing on the edges of the feathers.

"For breeding Brown-breasted Red pullets, use a cock rather darker in colour than the exhibition standard ; indeed, if his breast is nearly black so much the better. The most important points are shape and fine head properties, and as green-black wings as possible. Put two or three hens with him, and let them be perfect in everything, as dark in hackle as possible so as to have the gold edges at all.

"We breed our Duckwing cockerels in two ways. First, by a very bright rich-coloured Black-breasted Red cock, perfectly clear in hackle, and white-necked Wheaten hens. Secondly, by a perfectly-coloured Duckwing cock, and the Grey Wheaten hens, or very light-coloured Partridge-feathered Red hens. I find the above ways best, as a rule ; but Duckwings may also be bred from a Red cock and a prize Duckwing hen, by pure Duckwing parents on both sides, or by a Duckwing cock out of a Ginger-red hen.

"For breeding Duckwing pullets, use the Silver Duckwing cock and prize Duckwing hens, or exhibition standard Red hens. If the Red hens are used, select those which are the clearest golden colour on the head, and perfectly free from red or rusty marks on the wing.

"To breed the Red Pile cocks, take a rich-coloured White-breasted Red Pile cock, and put him to a couple of Pile hens rich gold in the neck, well rosed on the wing, and showing a little colour on the flight-coverts, but rather pale in the breast. To breed the pullets use the same cock and standard-coloured hens, not more than two or three hens at a time. When we use a cross of any other colour with the Piles, it is the Black-breasted Red, and we choose the darkest Red cock we can find in our stock, and put him to the darkest-coloured Pile hens, being particular that the Red cock's wings have a very deep rich bay on them.

"The Wheaten hens are bred from the cock-breeding strains of Black-breasted Reds and Duckwings, and need no further description.

"Exhibiting successfully requires knowledge and tact. There are many good Game Bantam cocks that when alone show admirably in a pen, but if a hen is placed with them, droop their wings and spread their tails so as to make them look worthless. It is well to know the natural disposition and all the peculiarities of your birds, and to guard against such cases as these. There are other cocks that always look sulky alone, and will not show at all unless they have a hen with them. Many a good bird loses his chance for want of ascertaining whether he shows best alone or in company.

"It is desirable to accustom a cock to being in a pen, so that he may feel at home in it.

Many good birds will not show to advantage through being wild and frightened. I therefore usually put up the cockerels I intend for exhibition about a week before the show, keeping them in a wire pen or cage, four feet long, two and a half wide, and two high. Feed them as usual, and now and then add a few hemp-seeds and a few white peas, which will brighten the feathers. The hens, on the contrary, should not be caged up, but have their usual grass-run up to the time of exhibiting them; for, as a rule, hens lose condition rapidly when penned up.

"The 'trimming' required before sending the birds to show is simply to wash their heads, legs, and feet clean, and to cut off close to the skin the stiff bristly feathers that stand up over the eye of the cock, not touching the feathers that lie flat and in proper order. It is absolutely necessary that all birds shown in one pen should match exactly in colour of eyes and legs; and when a pair of hens or pullets are shown, they should match in every point—head, eye, comb, colour and marking, style, size, &c.

"The best time to show pullets is as soon as they have acquired full feather, and before they commence laying, say from four to seven months old. Cocks show best between six and fourteen months of age, and are generally better the first year than ever afterwards. The exceptions to this rule are very rare, but I have had a few Black-red cocks that have won cups after their second year, and in very strong competition. There are comparatively very few Game Bantam cocks that grow fine long sickle-feathers after the first moult, and they usually get too thick and clumsy-looking at the same time, especially about the head and neck."

Mr. Entwistle has so fully treated of every necessary point, that we have nothing to add beyond one or two general remarks. We may observe that even at present there is a perceptible improvement going on in the style and "gamey" make of these beautiful birds, so that every year a greater number of specimens are shown which retain their beauty even during that second season which has been quite correctly stated to be so fatal in general to these points. Much in regard to this depends on good hard feeding and plenty of exercise, the best cock being in danger of growing clumsy and stocky if confined and overfed.

Game Bantams are hardy birds, and need little care, while on the table they make no bad substitute for partridges. The hens are generally pretty good layers, and always make capital sitters and mothers. The question of crosses we need not enter into, since to cross them is to lose every point which makes them desirable.

JUDGING GAME BANTAMS.—These Game fowls in miniature are to be judged very much as their larger brethren, only allowing due weight to size, or rather to want of it. It will have been observed that the maximum weight for the cock is given by Mr. Entwistle as twenty-six ounces, whereas the so-called "Standard of Excellence" gives the maximum weight as twenty-four ounces, and states that all above that weight are "disqualified." On this subject we need only repeat our remarks in the last chapter, only adding that in the case of Game Bantams they have, if possible, so much greater force, that the alleged "disqualification" is perfectly absurd. We have seen many a small symmetrical bird, of splendid shape and carriage, and "hard as a nail" in flesh and feather, which for that very reason would *weigh* more than the twenty-four ounce limit, and more also than a much larger-looking, loose-bodied, and loose-feathered bird, in bad condition, which yet would come within the "Standard." Even the twenty-six ounce limit, though pretty safe, should not be pushed too far in case of a bird otherwise good in true Game Bantam points; and never to such a degree as to disqualify a good bird in favour of a lighter, but in every other respect bad one.

Game Bantam cocks not unfrequently have false sickles fastened in, and are also frequently

shown much plucked about the hackle and saddle-feathers. A case of the former kind known to us was almost the *only* case of trimming we ever met with in which, while condemning an indubitable breach of morality, we could not help feeling some sympathy for the perpetrator. He had shown his bird in faultless condition, and won the cup, when some dirty scamp plucked the sickles out of jealousy. How the job was managed we do not know, since the natural stumps to which false feathers are generally attached were in this case wanting, but *somehow*—perhaps in the stumps of the top pair of tail-feathers—the bird's own sickles *were* re-affixed, and he again won, to be afterwards denounced by, and disqualified on the complaint of, the very man who, we have not the slightest moral doubt, did the injury, and therefore knew, as no one else could, of the operation that must have been performed for the bird to be shown again. Some rather strong language was used on that occasion, but we could not resist the conclusion, knowing what we did know, that in this case "there was something to be said on both sides."

Mr. Entwistle has kindly sent us the following Scale of Points, as used by him in judging for several years. We ought to add that it was sent to us *after* our own had been sent to him in type; and if this be remembered, the agreement in all essential points will be found remarkable, and such as bears a further strong testimony to the accuracy of our own methods of analysis.

MR. ENTWISTLE'S SCALE OF POINTS FOR GAME BANTAMS.

Good colour	20
Good symmetry	12
Correct size and weight	10
Good condition—appearance, 10, and handling, 8	18
Good fine head	10
Good-coloured eyes	4
Good hard feather, divided as follows:—Hackle, short and close, 4; tail, narrow and well-carried, 8; wings, short and well up, 8	20
Long and slender legs and feet or toes	6
	100

Mr. Entwistle, it will be seen, prefers the even scale of 100 points; and we may, perhaps, here reply to several of our readers who have seemed at a loss to understand why in our scales the defects, if all added up, do not even *profess* to balance the value of a perfect bird. We can only refer to our arguments on this head at page 235, with the added remark that even the list of "disqualifications" in any scale is a list of faults *extra* to the 100 points; and that if it be necessary, the added points should sum up exactly 100, and—as often happens—what has hitherto been only considered a *fault* is advanced to the rank of *disqualification* (as, for instance, crest in La Flèche); the scale must in that case be *altered*, in order that the remaining points may still add up 100. This, if accuracy be the end of a scale, is absurd. Again, in the case of some breeds which have fewer characteristics, greater values must in the case of 100 points be given to those few characteristics in proportion to other breeds, in order that the total may "fill" the scale; for instance, any black variety, having less points for plumage than a coloured or marked one, the comb or similar points must have *more* value given them in order to balance. This too is absurd, and contrary to fact. To facts, indeed, we appeal. We began with attempts to keep to 100 points, but *all* our analyses pointed to the conclusion that the principle was wrong; and though we could with no difficulty reduce all our scales to exactly 100, it would be to ensure an altogether artificial "symmetry," at the expense of accuracy.

SCHEDULE FOR JUDGING GAME BANTAMS.

GENERAL CHARACTERISTICS AND COLOUR OF GAME BANTAMS.—The same in all respects as for Game, excepting size. Except however in Piles, which are best yellow, the legs are almost always willow or olive, Brown-reds being a very dark shade, or bronze. Weight should not exceed twenty-six ounces in cocks, and twenty ounces in hens. Carriage and general shape also resembling Game, but from the small size appearing more pert and saucy.

VALUE OF DEFECTS IN JUDGING.

Points of Merit.	
A bird perfect in shape, style, colour, condition, and hardness of body and feather, and not too large, to count in points	100
For an extra small bird otherwise perfect. See Note. *	

Defects to be Deducted.	
Bad head	10
Too much hackle-feathering	5
Tail too ample, or spread	8
Wings carried too low	12
Thick or clumsy body	12
Legs or feet awkward, or imperfect, or out of proportion	14
Faulty colour	21
Too great size	See Note *
Want of general symmetry	15
,, ,, condition (as to appearance)	15
,, ,, hardness (on handling)	12

DISQUALIFICATIONS.—Same as in Game fowls.

* We have found, with birds in average condition, that twenty-two ounces in cockerels and eighteen ounces in hens are what will fairly entitle birds to be called "perfect;" and about one point should be deducted for the first ounce over this, two points the second ounce, three points the third ounce, and so on, while two points per ounce may be credited for less weights. But as already observed, individual birds differ much, and it is the *apparent size usually denoted* by these weights, and not the weights themselves, that are to be considered by the judge.

CHAPTER XXXI.

WILD BREEDS OF POULTRY—ORIGIN OF THE DOMESTIC FOWL.

WE have already on several occasions incidentally stated our opinion that more facts need to be ascertained before the question as to the origin of the Domestic Fowl can be satisfactorily settled. It is well-known, however, that most modern naturalists, among whom Mr. Darwin deserves special mention, believe that one existing wild variety, known as the *Gallus Bankiva*, or *Gallus ferrugineus*, is the sole progenitor; and as we formerly accepted this view ourselves on what we supposed to be the sufficient authority of such names, but have been gradually led to look upon it with the greatest distrust by facts which have since fallen under our own observation, or been communicated to us by others in the course of an extensive correspondence upon poultry matters, it may be expected that we should not altogether pass by the subject. We shall, therefore, after describing the four wild varieties at present known, state briefly the chief reasons why we feel unable to adopt the ordinary view, and how we are at least inclined to regard the matter from all the facts as yet known. To do more than this in the present state of knowledge would be to repeat the very fault which we think has been committed by others—of dogmatising upon insufficient information: it will, therefore, be understood that we only profess to treat the question as it shapes itself for the present in our own mind.

The varieties of wild Jungle Fowl now known to naturalists we have already stated to be four in number; and these we will first describe, adding such information concerning them as we have been able to obtain.

GALLUS BANKIVA, or *Gallus ferrugineus*.—This is the most widely-distributed of all the wild breeds of India, ranging all over Continental India, till in the eastward it meets with Sonnerat's Fowl, and southward through the principal islands. In Malay it is called *Ayam utan*, the word "ayam," as we have already seen, signifying fowl. It is generally described as resembling the Black-breasted Red Game, but smaller, and with a more drooping tail; in fact, as being midway between Game and Game Bantams in size, but resembling the variety named in colour, with dark legs having a slight green tinge; but later and more accurate observers have detected very evident differences in colour, and even size, between the birds found in various parts. Mr. Trevor Dickens, who spent many years in India as an officer in the army, and during that time paid special attention to both the wild and game native breeds, states that besides the small variety with horn-coloured or greenish legs, "there is another and rather larger sort of the *Gallus ferrugineus*, which has often been mistaken for the *Gallus Sonneratii;* this species has yellow legs, and may be styled the *Gallus ferrugineus major;* while the less and commoner breed may be styled *Gallus ferrugineus minor*." He also states that in different parts they vary much in colour, some resembling Black-reds, some Brown-reds or Ginger-reds, and others more of a yellowish brown. Sir William Jardine corroborates this statement; and so does Mr. Blyth, who, as Curator of the Asiatic Society's Museum at Calcutta, had unusual facilities for observation. He states that

the birds brought from the Himalayas are paler in tint than those from other parts of India; that those from the Malayan peninsula are brighter-coloured than the Indian birds; and even that the Malay birds had red deaf-ears, whilst nearly all the Indian specimens had white ears, though he had seen one Indian specimen without this very distinct characteristic. Mr. Blyth also noted that the legs of most Indian birds were leaden blue, while the Malayan and Javan had a distinct yellowish tinge; and Mr. Darwin remarks that Malay hens seen by him were redder on the breast and neck than Indian hens. On the whole, however, the bird everywhere very closely resembles the Black-red Game type, and has a good, ordinary, erect, serrated single comb and wattles, resembling those of the domestic variety. The cock is generally a really black-breasted bird when adult, though the chickens mostly have the black mixed with rusty feathers, which is not uncommon in Partridge Cochins and other black-breasted red breeds. The hen also possesses comb and wattles, in which this variety differs from some of the others to be described. On the whole, and allowing for a considerable variety in tint (we have seen that even the Black-breasted Game breed varies very considerably in colour), we may say briefly, that a bird midway between the Game and Game Bantam in size, with rather lower carriage, and with the tail borne almost horizontally, gives a sufficiently accurate idea of the *Gallus Bankiva*.

This fowl is found to breed very freely with the Domestic Fowl of India, and the progeny is fertile with either parent race. It is also a fact of great weight that the voice of each sex—that of the hen especially—closely resembles that of the domestic bird, though the last note of the crow in the cock is less prolonged. It also appears fairly capable of domestication.

This Jungle Fowl is very often shot for sport, and is said to afford very pretty shooting. If killed young and hung for a few days, they have a most delicious gamey flavour. "In travelling through a forest country," says Jerdon, "many are always found near the roads, to which they resort to pick up the grain from the droppings of cattle, &c. Dogs often put them up, when they at once fly on to the nearest trees. When cultivated land is near their haunts, they may be seen morning and evening in the fields, often in straggling parties of from ten to twenty."

GALLUS STANLEYII.—This wild breed is generally stated to be peculiar to the island of Ceylon, but Mr. Trevor Dickens states that it is also met with on the southern slopes of the Ghauts, and in Java. It is very much like the preceding, except that the cock has a red or brown breast, and the comb is almost yellow, but with a red edge. We should be disposed to consider it as practically identical with the *Gallus Bankiva*, but for the very peculiar crow, which both Tennant and Layard describe as closely resembling the words "George Joyce" sharply repeated. The cock often crosses with the domestic breeds; but Mr. Mitford states that both of two hybrids he possessed which were thus produced were perfectly sterile. Both inherited the voice of the wild parent. This variety has never yet been known to breed in confinement, and, till very lately, no living specimens had ever reached Europe. Early in September, 1873, however, a pair were delivered at the Zoological Society's Gardens in Regent's Park, London; and, although on arrival there appeared very little chance of their surviving, the skill and care devoted to them had such success, that at the time of a visit we paid, some three weeks later, they were considerably recovered, the cock being half-way through his moult, and improving daily. The male bird of this pair had orange-yellow hackles, a yellowish-red breast, pink legs, and a beautiful bluish-purple saddle. The hackles are true hackle-feathers, but the blue saddle-feathers are broad and rounded at the points, though exceedingly glossy. The comb is short or narrow at the base, expanding at the summit, and both it and the wattles are of the ordinary colour, except that the comb is yellow in the centre. The comb of the hen is very small, though still perceptible; and her plumage is a plain unobtrusive

partridge colour. The eyes of both birds are pearl or greenish-white; and it is somewhat remarkable that cock-fighters in India always place most reliance on birds with eyes of this colour; the more so as Layard says the cock of *Gallus Stanleyii* has tremendously sharp spurs, and in the frequent fights which occur seldom fails to thrash the domestic bird. He also states that the hen lays from six to twelve eggs, which are of a cream colour, mottled with reddish-brown specks; and that the young when hatched resemble young chickens of the Domestic Fowl.

SONNERAT'S JUNGLE FOWL, *Gallus Sonneratii* of naturalists, is a very peculiar and

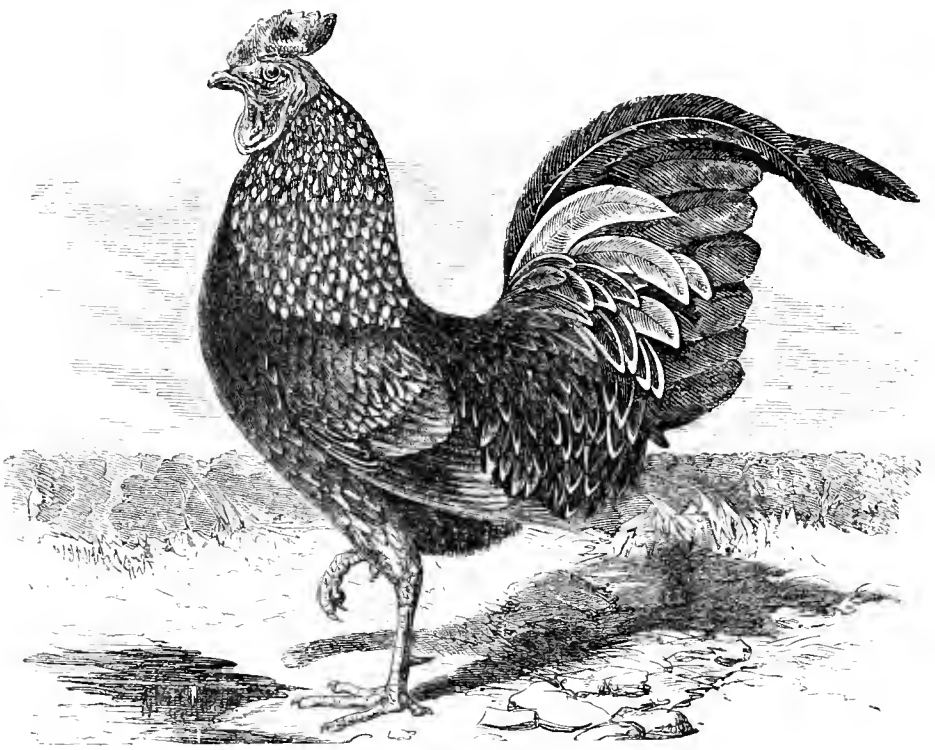


Fig. 99.—Gallus Sonneratii.

apparently distinct variety. It is confined to the more southerly parts of India, among which, however, it is very common, and is that known as the "Jungle Cock" by Indian sportsmen. Colonel Sykes says that it is very abundant in the woods of the western Ghauts, and that it should be subdivided into two strongly-marked varieties; one of which, however, appears to be the *Gallus Stanleyii*, the cock having a great deal of red in the plumage, which the true Sonnerat has not.

This breed in general contour much more resembles the Domestic Fowl than either of the preceding, as will be seen from the illustration; it is also larger, stronger, and more powerful. It, however, differs in the hen being destitute of either comb or wattles, while the comb of the cock has only very fine serrations on the edge; and still more in the peculiar character of the cock's hackles, the shafts of which expand at the tips into a flat and horny plate, which gleams in the sun. These plates are generally of a golden orange-colour, but occasionally appear banded with various colours. The plumed portion of the hackle is dark greyish, the shafts being deep gold, which expand at the tips into the plates just described; and not unfrequently the hackles will show *two*

such plates, the shaft of the feather contracting after the first and then again expanding. The breast and back are generally a rich grey, verging into black or blue dun; the tail black, brilliantly glossed with green; and the bill, legs, and feet yellow. Occasionally yellow is found in the hackles and other plumage. The hen is generally of a brown or partridge-colour on the upper parts, and greyish white on the breast, passing into almost pure white under the throat. Traces of the peculiar horny plates have been found in the hen, but are not common.

The crow of the cock is agreed by all to differ somewhat from that of the ordinary fowl. Colonel Sykes says it resembles the crow of the Bantam; Jerdon says it "is very peculiar, being a broken and imperfect kind of crow, impossible to describe;" and Mr. Darwin affirms that "its voice is utterly different."

The Sonnerat Fowl has been more kept and bred in England than any other of the Jungle Fowls, owing no doubt to its attractive appearance. Mr. Jamrach has imported many of them; but in many cases, from ignorance of its habits, or, as we believe, from "too much kindness," they have not done well. We have, however, been kindly furnished in several instances with notes upon this beautiful bird, and the results of breeding it in confinement, which will be read with interest on account of the little practically known hitherto upon the subject.

Mr. J. Charlton Parr, of Grappenhall Heyes, Warrington, writes us as follows:—

"The only breed of Jungle Fowls I have kept is the Sonnerat, of which I bought a pair of imported birds from Mr. Jamrach. The hen laid twice—I mean two separate litters of four eggs each time—the first year, and showed a strong disposition to sit; but I took the eggs each time and put them under Bantams: three or four were hatched, and one lived till about half-grown, but then sickened and died. The next year the hen laid three litters of four eggs (seemingly the invariable number, being never more and never less at a time), and I succeeding in rearing five birds, a cock and four hens. These were as tame as ordinary fowls, and came to the whistle. I gave two of the hens away (one of them to the Zoological Society, Regent's Park, London), and one I think died by some accident. The cock was a very fine bird, but during the winter, just as he had attained his handsome plumage, a weasel killed him; the old cock died soon after, and so my chances of further increase were at an end. The old hen lived a long time, seemed perfectly strong and healthy, and not to suffer at all from the severest weather. The old cock was looking 'seedy' at one time, and I thought not likely to live, so by way of experiment I turned him loose in the depth of winter, with even snow on the ground; he soon began to improve, and in a month's time was quite recovered.

"The crow of the cock bird was very extraordinary, not like the crow of a cock, but more like the scream of a peacock; and the hen's voice, too, was unlike that of the domestic hen. I feel confident myself that the Sonnerat Fowl is not at all events the parent of any of our breeds of Game Fowl. I did not succeed in crossing with common fowl; though I put a hen Game Bantam with the Sonnerat cock, he never seemed to take the least notice of her, except to drive her away. I was surprised to notice that the eggs always hatched in seventeen or eighteen days, instead of the time needed for the incubation of the Domestic Fowl."

Mr. G. Nevile, of Stubton, Newark, again, writes us as follows:—

"In answer to your questions, I bought a pair of Jungle Fowl [Sonnerat] in 1863, and for seven years continued to breed from them and one pair of their progeny, with more or less success; rearing sometimes one pair, once two pair, but frequently none, as I found that unless they were very forward and healthy birds they could not stand the approach of winter, even though placed in warmed houses with yards for exercise. I never could rear enough to allow them to run wild. They had generally two months or so of run in an enclosed small paddock in the late summer, but

at other times were penned up. I think no modification of the wild disposition could be observed, further than their coming to be fed with any favourite food.

"I know of no particular habit wherein they differ from the Domestic Fowl, unless that of laying only four eggs at one laying and then wishing to sit, though they soon began to lay again if not permitted to. I never remember to have heard the voice of the hen at all; the cock's peculiar crow is of course well known. I came to the conclusion that Jungle Fowl were too delicate for this country. We fed them like young pheasants, on ants' eggs; and it was difficult to get the young ones to take any other food."

Mr. John Douglas, of Clumber, Worksop, Notts, has bred the Sonnerat Fowl rather extensively, and also many hybrids, which makes his experience especially valuable. He writes of them in the following terms:—

"I got my stock from a pure cock and hen some years back; and after breeding from them, I put the cock to some Game Bantam hens, and some of the pullets to a Game Bantam cock. From each cross I had several broods, which were much wilder in disposition than the pure Game, and in general kept to the woods, always laying at a distance off among the trees. Besides the cross-breds, I have bred I should think at least twenty pure Sonnerats from the original stock.

"The pure Sonnerats always came true to colour, and did not seem to deteriorate at all in the neck-hackles. They always seemed wild, and when started got up even wilder than the pheasants; and I believe would make even better sport than pheasants in cover, being quicker and more difficult to hit. I may say, indeed, that one object I had was to make them an addition to our shooting, or add them to our game birds as an extra variety; and I cannot see that there would have been any difficulty, but that we were so infested with foxes they got destroyed almost as fast as I could breed them, which was very discouraging.

"I found one thing which interested me about the pure Sonnerat hens or pullets, and that was, that if their eggs were taken away after sitting a week, they would in eight or nine days lay again. I have had them lay from nine to fifteen eggs at a time, never I think less than nine. In one case I took away the eggs when the hen had sat a fortnight, and she laid again in seven days—a pure wild hen. The crow of the cock is certainly different to the Game, but *not so very different to some Bantams.* The young are very hardy and quite easily reared. If I lived in a county where foxes were not preserved, I would undertake to 'swarm' a cover in three years from one pair of healthy Sonnerats, I am so confident of the hardiness of the young with proper care.

"Among the cross-bred birds I found the Sonnerat blood showed much more in the pullets than the cockerels; after eight years I can detect it in the pullets, the light-coloured quills showing in the feathers of the back and breast. The cockerels from the very first cross of the Sonnerat cock and Game Bantam hens (which were black-reds) had most of them lost all the waxy appearance in their hackles; and the second cross from these half-bred cockerels with the black-red hens had lost nearly all signs of the cross with regard to the colour; but you could trace the blood in the shape and symmetry—perhaps more in the head than any other point. And I never noticed any of the cross-bred cockerels 'throw back' to the Sonnerat colour at all, though, as I have said, we can see the blood in the head now and then. But in the pullets bred the same way, only *vice versâ*, the colour seemed to remain; and even now, after eight years, I can still see the colour of the pure Sonnerat hen in some of the pullets to a great extent, though the blood is pretty much lost."

Finding Mr. Douglas had kept his original stock for some time in confinement, before turning the birds out, we asked him for his mode of treatment under those circumstances, as more likely to be of use to those who might in future desire to keep this beautiful bird. He has accordingly

described his management for us; the great point, as will be seen, being to ensure an *appearance* of nature as far as possible.

"Where I kept my first pair to breed from," he says, "was in a new pen, twelve feet wide and thirty-six feet long, fenced in eighteen feet high. It had a roosting-house twelve feet square open to the front, and two dwarfed oak trees about fifteen feet high, so placed that they could fly from one to the other, and close to the woods. Here (in the two trees) they roosted, summer and winter; never in any sort of weather would they roost inside of the house made for them. Every week they had a fresh piece a yard square of heath and turf let into the ground, with plenty of lettuces and any *fruit* that was in season, such as a few strawberries, currants, bramble or blackberries, or in fact any soft fruit I could get, taking care not to overdo the thing. They were fed on good soft food, with a little wheat and sometimes rice boiled; and had a heap of cinder-ashes and old lime rubbish in a dry corner, with a nice supply of road washings, which are the fine, small, bright stones you will find at the bottom of the hills on turnpike roads after heavy rains. Of course they must be kept from much intrusion to do well. The young only require to be attended to as carefully as any other fancy poultry; keeping the hen cooped the same as for pheasants. They grow up as tame as reared pheasants, but as age increases will ramble off into the cover, always however coming back to feed at call. The half-breeds take more after Game Bantams in disposition, but still show more shyness. I forgot to say I found the pure breeds, while in confinement, were very fond of small *live mice*, of which I always took care to supply them with a few weekly."

THE JAVANESE JUNGLE FOWL, known to naturalists as *Gallus varius*, or *Gallus furcatus*, or as the "Forked-tailed Cock," which is simply the last name translated, is in some respects a most peculiar and strongly-marked bird. Very few have reached Europe, but there are, or at least were very recently, fine specimens in the Zoological Gardens at Antwerp. There used to be some also in the gardens at Regent's Park, London, from the male of which some hybrids were raised. Such hybrids are suspected to have received the names of *Gallus Æneus* and *Gallus Temminckii*, which are either cross-bred from the Javan Fowl, or evidently only sub-varieties of it; though some naturalists have supposed the *Gallus Æneus* to be the original type, and *Gallus varius* the derived.

The comb of the cock, which is small and unserrated, is bluish at the base, changing to violet or purple at the edge. The head is rather long and narrow, the face being red, and the eye very prominent. Under the throat, in place of the usual double wattles, is a single wattle hanging from the median line of the lower mandible. This wattle is yellow at the back of the throat, changing into a rich dark crimson at the anterior edge. The feathers of the neck are scarcely like hackles, but are blunt and rounded on the lower edge, and being of a deep metallic green bordered with black, give much the effect of scales. These "scaly" feathers reach, as in the ordinary hackles of the common cock, to the middle of the back. The saddle-feathers are the same metallic green in the centre, but are bordered with yellow; and the wing-bow feathers, or shoulder-coverts, are the same green with golden-green edges. The secondaries are a deep orange-red on the lower edges, which is all that appears when the wing is closed, while the primaries are nearly black; the under parts also being black or very dark grey, with a bluish shade, or what Game-breeders call a blue-dun colour. The tail is glossy green-black, the two centre feathers branching open, from which one of the names is derived. The hen is smaller, has no comb or wattles, and is of a generally greyish colour underneath, with greenish hackles, and grey with a more brownish tinge over the upper parts of the body and tail. The colour of the legs seems to vary, the Antwerp specimens being of a flesh-colour, while most Eastern sportsmen describe the colour as blue or bluish grey.

The above are all the wild breeds of poultry now known to naturalists. Temminck described a fifth, under the name of *Gallus giganteus*, which is generally supposed to have been the Malay, though there is some difficulty in reconciling the whole of his description with that breed. The Malay at all events is now extinct as a wild race, so far as is at present known. Reviewing these four varieties, then, most naturalists consider the *Gallus Bankiva* to be the sole progenitor of the domestic breeds; and Mr. Darwin sums up the arguments in favour of this view so forcibly, that we may for convenience condense them from his work alone.*

Of the Sonnerat Fowl Mr. Darwin notices the peculiar horny plates, which he has not been able to find traces of in any domestic breed, and which he found in some hybrids raised in the Zoological Gardens from a Red Game hen; also the absence of distinct serrations in the cock's comb, the want of true hackles on the saddle, the "utterly different" voice, and the nearly sterile character of the hybrids. Of the last point especially he collects examples; quoting Mr. Blyth, who raised nearly 100 hybrid chickens, which were tender, and mostly died young, those which survived being absolutely sterile when crossed either *inter se* or with either parent. Mr. Dixon, he says, inquired into some hybrids raised at the Regent's Park Gardens, and found them not quite so sterile, five or six chickens being reared out of about fifty eggs, but still very unfertile. In other and more extensive experiments at the Gardens, out of some 500 eggs from various hybrids and first crosses, only twelve chickens were reared, of which only three were the product of hybrids *inter se*. "From these facts, and from the above strongly-marked differences in structure between the Domestic Fowl and *Gallus Sonneratii*," Mr. Darwin concludes, "we may reject this latter species as the parent of any domestic breed."

Of the *Gallus Stanleyii* he says that, like the last, it crosses readily with the tame hens, and even visits farms for that purpose. But the two hybrids being found by Mr. Mitford to be quite sterile, this too "may in all probability be rejected as one of the primitive stocks."

The *Gallus furcatus* is said to "differ in so many characters—green plumage, unserrated comb, and single median wattle—that no one supposes it to have been the parent of any one of our breeds," though many hybrids have been raised from it. These hybrids are said by Mr. Crawford to be invariably sterile; but Mr. Darwin himself states that this was not the case with some bred at the Gardens. He also adds the curious fact that across the tail of one of several fowls sent him by Sir James Brooke from Borneo were *transverse blue bands*, like those which are very often seen on the tails of the hybrids from *Gallus furcatus;* this he thinks may denote that some of the fowls of Borneo have been affected by a cross of *Gallus furcatus*, though the case may also possibly be merely one of "analogous variation."

Coming, then, to *Gallus Bankiva*, he finds that this variety has a much wider range than the other; that it varies in its *habitat;* that it varies considerably even in the wild state; that it almost precisely resembles the Game—the most typical of all our present breeds; that the voice resembles that of the Game cock; and that it breeds freely with Bantams, and the progeny also breed freely with Bantams, though very unfortunately Captain Hutton, who establishes this fact, did not attempt breeding the hybrids *inter se*. This is certainly to be regretted, as the breeding of hybrids amongst themselves is known universally to be the severest proof of unity of species; we think, however, it is very possible the experiment would have succeeded. Hence Mr. Darwin concludes that "from the extremely close resemblance in colour, general structure, and especially in voice, between *Gallus Bankiva* and the Game fowl; from their fertility, as far as this has been ascertained, when crossed; from the possibility of the wild species being tamed; and from its varying in the

* "Variation of Animals and Plants under Domestication," Vol. I., pp. 233–237.

wild state, we may confidently look at it as the parent of at least the Game breeds." Then replying to the hypothesis that some other wild species may have been the parent of other breeds, and still exist undiscovered or have become extinct, he considers extinction at least "an improbable hypothesis, seeing that the four known species have not become extinct in the most ancient and thickly-peopled regions of the East." He ends with the general argument that "the four known species of *Gallus*, when crossed with each other, or when crossed (with the exception of *Gallus Bankiva*) with the Domestic Fowl, produce infertile hybrids;" but finally admits that "we have not such good evidence with fowls as with pigeons of all the breeds having descended from a single primitive stock." This last sentence speaks the truly scientific man, and stands in amusing contrast with the ignorant dogmatism of some who, without a tithe of Mr. Darwin's knowledge, have written as if the whole matter could be settled by their bare affirmation, and even gone out of their way to speak in terms of deliberate insult of such as had the misfortune to be unable to agree with them. With such we have nothing to do—they are beyond conviction; but for those who honestly seek further facts upon which to reason, we will proceed to state such as have come under our own notice, and seem to us to furnish strong reasons against some of Mr. Darwin's conclusions. We say some of them, because they by no means tend to prove that there was not one primitive stock; though they do, in our opinion, make it exceedingly doubtful whether that stock was the *Gallus Bankiva*.

In the first place, then, the supposed sterility of Sonnerat hybrids seems to us to rest on very insufficient data, and is indeed altogether disproved by the experience of Mr. Douglas above quoted. Mr. Blyth himself is stated to have raised nearly 100 hybrids at Calcutta—a most amazing number if the races are alien, as all who have tried to produce pheasant hybrids are well aware. Those which were reared, it is true, are stated to have been "absolutely sterile," whether bred *inter se* or with either parent, and to have been very tender, mostly dying young. But this weakness of constitution we have seen to be shared by the *pure* Sonnerat in the experience of both Mr. Parr and Mr. Nevile; while, on the other hand, Mr. Douglas found them both hardy, and the hybrids prolific. These contradictions appear at first sight inexplicable, but vanish on consideration. Mr. Parr and Mr. Nevile kept them in confinement, one gentleman even giving them warmed houses; while the other was *a skilled poultry-fancier and breeder*, thoroughly acquainted with the rearing both of game and poultry, and who kept and reared his as nearly as possible in their free, wild condition. We have already seen the effect of such treatment in the case of delicate domestic breeds (see Mr. Teebay's notes on Spanish), and we get a most significant confirmation of our supposition as to the cause of such surprising differences of experience, in Mr. Parr's own old cock, which, ailing as he was, *revived directly he was turned out in the woods*, although the snow was on the ground. Stronger corroboration there could in fact hardly be; but since his notes above were written, we have asked Mr. Douglas specially as to the prolificacy of the hybrids, and he replies as follows:—"The hybrids, or cross-breds, with me were very prolific—hardly ever a bad egg. They crossed all ways, as I had them for years and crossed them anyhow—or rather they crossed themselves—and how they bred I scarcely know; but I do know there were but few eggs failed to have chicks in them." Again, it is admitted that three chickens were actually reared at the Gardens from hybrids crossed *inter se;* and small as this number is, breeding *inter se* at all is a fact so strong, as is in nearly all other cases held sufficient to constitute unity of species; while we have shown the strongest reasons for believing that the want of greater fertility, and the barrenness in other cases, may have been owing to too artificial treatment. The men to make such experiments are men like Mr. Douglas, who have made the ways and habits of fowls the *special* study of their lives, and who think nothing of disappointments which would throw others possessing only

a general knowledge of the subject off the track at once. Hence they succeed where others fail; and if, in the case of curassows or other birds it is desired to acclimatise, stock were judiciously distributed amongst such skilled breeders rather than to provincial "societies," we are convinced that the results would be far greater than they now frequently are.*

The very fact that both Mr. Parr and Mr. Nevile found the Sonnerat hens to lay only four eggs at a litter, may be taken to confirm the same view, of the unnatural confinement diminishing the fertility of even the pure breed. It is true, as Mr. Douglas has pointed out to us, that it may also have arisen from the hens being aged, since old Game hens will often only lay four eggs at a litter, or even three; but the probability is, we think, rather as we have stated. Could it be shown that the number four was the invariable litter of the Sonnerat Fowl, the fact would be stronger than any Mr. Darwin has mentioned in favour of distinctness of species, marking, in fact, even more distinctness than is the case with pheasants or turkeys; but that this is not the case is certain. Not only is Mr. Douglas's experience quite different, but Dr. Jerdon—a most excellent authority—writes that "the hen (wild) lays from February to May, generally producing from seven to ten eggs, of a pinky cream-colour." Hence we may conclude that, be the cause what it may, the number of four eggs was exceptional. The short period of incubation need scarcely be mentioned, being common to many breeds of Bantams, and in less degree to the Hamburghs also.

With regard to the horny plates in the cock's plumage, we have seen that in most of the cases, at least in Mr. Douglas's experience, this feature readily disappeared or was absorbed, though in some specimens of hybrids Mr. Darwin found them present, but "much smaller." And Dr. Horner† gives an account of some hybrids he had obtained from the Zoological Gardens, of which the cock was bred from a true Sonnerat with a Game hen, and the hen was his own grand-daughter through a Game hen. Dr. Horner, it is worthy of remark, states nothing about the birds being unprolific, though he says their chickens were delicate and reared with difficulty; but we refer to his account chiefly for a remark he makes, as follows:—"Mr. Hunt [then chief superintendent of the aviaries at the Zoological Gardens, Regent's Park] informs me that he believes there are but two cock birds in England really bred direct from the Sonnerat Jungle Fowl, and which *exhibit the peculiar golden plate on the feathers*—the one at present in the Regent's Park Gardens and my own. He also warns me of the difficulty of rearing chickens bred in-and-in." The italics are Dr. Horner's, and rather significant; proving that hybrids of the Sonnerat did *not* always present the peculiar golden plate; and the remark at the end inferentially renders it probable that many of the hybrids bred at the Gardens were produced from in-bred, and therefore partially unprolific stock. It seems, therefore, plain to us that the peculiar horny plate, supposed to be so strong a proof of distinctness of species, cannot be laid much stress upon, being readily absorbed and quickly disappearing. It certainly is not more distinct in its character than the crest of a Polish fowl; yet this we have before seen is readily absorbed in a cross, and disappears in the same way, while in other cases it maintains its ground, and marks a variety breeding as true as any, though—and the coincidence is singular—often decidedly unfertile in comparison with some other breeds. The true character of this feature must also be considered, since its importance may otherwise be much exaggerated.

* In an article by Mr. Tegetmeier on the Amherst Pheasant, in *The Field* for August 30th, 1873, is a remark which singularly illustrates this question of fertility. "It is found, says the writer, "that the breeding of the Amherst pheasant offers no difficulty, provided it be attempted *under natural conditions*, and not in the close pens and stifling vermin-haunted houses that are characteristic of some of our zoological collections." We hardly need remark that no reference is here intended to the Regent's Park Gardens; Mr. Bartlett's efforts to secure "natural conditions," and consequent comparative success, being well known; but even there the space at command is not sufficient to test the fertility of naturally wild fowls.

† Wingfield and Johnson's "Poultry Book," 1855, pp. 148, 237.

Its real nature appears by comparison with the feathers of the Sebastopol goose, an analogy which is pointed out by Mr. Darwin himself when describing that bird. "These feathers," he says, "are remarkable from the central shaft, which is excessively thin and transparent, being split into fine filaments, which after running for a space free, sometimes coalesce again. It is a curious fact that these filaments are regularly clothed on each side with fine down or barbules, *precisely like those on the proper barbs of the feather:* this structure of the feathers is transmitted to half-bred birds. In *Gallus Sonneratii* the barbs and barbules blend together, and form thin horny plates of the same nature with the shaft. In this variety of the goose, the shaft *divides* into filaments which acquire barbules, and thus resemble true barbs." Hence we see that this goose presents a variation from the normal type of a precisely analogous character (though in contrariety) to that of the Sonnerat; yet no one supposes it to be a distinct species.

Regarding the Ceylon Jungle Fowl, or *Gallus Stanleyii*, there is less evidence available on either side. The fact that hybrids between it and the common fowl are so common in Ceylon as scarcely to excite remark, should make us cautious in concluding, on the sole evidence of the two individuals mentioned by Mr. Mitford, that such hybrids are sterile; and on this point many of our observations on the *Gallus Sonneratii*, as to the difficulty of breeding from wild birds or their descendants *in captivity*, will peculiarly apply, for it will be noted that the wild breed itself is stated never to have bred in such circumstances, or even to have long survived. Hence we might expect great difficulty in breeding from its hybrids, quite apart from any actual sterility. The great difference in voice is of more weight, but will be thought much less of by a poultry-fancier, who is accustomed to the most extraordinary differences between the voices of various domestic races, than by a naturalist. On the whole, it must be admitted that there is very little evidence to show either that the *Gallus Stanleyii* had or had not any share in the origin of the domestic fowl, though it is worthy of remark that the resemblance of the bird itself is perhaps the most startling of all the wild breeds; so that Messrs. Layard and Kellaert mention the "George Joyce" crow as the sole reason for discarding it as one of the parent stocks. This reason, however, as we have remarked, a fancier would consider very insufficient if unsupported by others. In relation to this breed, it is also decidedly worthy of remark that in most cases of reversion in colour amongst various breeds of poultry, the evident tendency is towards a *red* or *brown breast* in the cock rather than to a black. This fact we have already pointed out; and, so far as it goes, it is more in favour of the present variety than of the *Gallus Bankiva* as a possible parent of our domestic breeds.

Of the Fork-tailed Java Cock, or *Gallus furcatus*, Mr. Darwin has remarked that it differs so very much from the Domestic Fowl, that "no one supposes" it to have been the parent of any of our breeds. The points of difference named are the green plumage, the unserrated comb, and the single median wattle; the last being, perhaps, the most marked of them all. We were, therefore, much surprised and interested to see only the other day a Light Brahma hen in which this identical feature was conspicuously developed. She was one of a trio of American Light Brahmas, sent by Mr. J. M. Wade, of Philadelphia, to Mr. G. Wm. Petter, of Streatham Grove, Surrey. One of the hens was the grand bird drawn for our plate, from a photograph, many months before reaching England, and which we found to weigh nearly fourteen pounds; the other was the hen in question. The extraordinary appearance of her head struck us at once, and is shown in Fig. 100, which is drawn from life. There is not a vestige of the ordinary wattles at the sides of the base of the lower mandible; but instead thereof an immense single wattle hanging in the true median line, giving the whole head a most peculiar expression, which is added to by the shapeless character of the comb. The feature would have struck any observer at once, as it struck ourselves; so strongly, in fact, that we at once sought and obtained a promise that the head of the bird should be pre-

served, which will be carried into effect. But this marked instance does not stand alone. In our own Brahma breeding, although we never had the wattles altogether absent, we have many times had the middle one excessively developed, while the true wattles were scarcely visible; and on writing to Mr. F. Wragg, who has probably bred more Brahmas than any one else living, he informs us that he has on several occasions bred birds in which the two wattles were joined together, though the division remained plainly perceptible. Hence it is plain that there is still a perceptible, though slight, tendency to revert to a single median wattle in the Brahma breed.

Even this is not all. We have already seen that this Brahma breed has the *forked tail* so characteristic of *Gallus furcatus;* which, considered together with the preceding facts, is a strange coincidence. The same forked tail we have occasionally seen in several other breeds; and once, in a report of a show, we remarked upon it in a prize Game Fowl. But further, and stranger still, Mr.

Fig. 100.—Head of Brahma with Single Wattle.

Darwin has referred to the shaded bands across the tails of some Borneo fowls, which he thinks may hence have had a cross from the *Gallus furcatus*, since hybrids of that fowl often show the same feature. These shaded bands we have *frequently* observed across the green-black tail-feathers of our own Dark Brahmas, and still more often across the tails of birds bred by Mr. Teebay. Across the greenish-black will be rather broad bands of blue and purple, and we believe these are never seen in other fowls unless crossed with Brahmas; at all events, we have examined every pen containing a cock in several large shows, without finding an example in other than the Brahma classes. And, finally, as regards this part of the subject, in the best and purest-coloured Dark Brahma cocks, there is a *greenish* lustre to both black and white of the hackles and saddle-feathers, which is not to be seen in any other breed having black and white hackles, such as Silver Duckwing Game, or Silver-grey Dorkings. If it be considered that these several points of resemblance all occur in one breed, they certainly suggest some curious conclusions.

Still further, we find that the blue or purple comb, unserrated, of the *Gallus furcatus* is a conspicuous feature of an existing breed, the Silky Fowl. And it will not have been forgotten that the Brahma, which offers those curious points of resemblance referred to in the preceding paragraphs, is marked besides by a peculiar comb; which though not that of the *Gallus furcatus*, still in many cases approaches it; for we have seen many Brahma cocks with pea-combs in which,

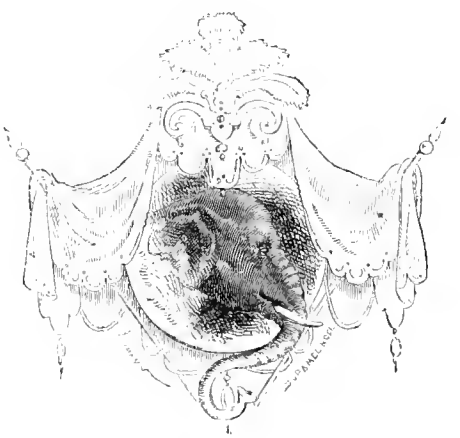
though the triple character was well marked, there was not a vestige of serration. The Rev. James Ellis, of Bracknell, Berks, once sent us a fine cock expressly to have our opinion upon a comb of this sort. And, lastly, we saw (see p. 247) that *all* the great Asiatic races, when crossed, have been known to produce the pea-comb by reversion; showing, on Mr. Darwin's own principles, that this feature almost certainly had a place somewhere in the ancestry of the Asiatic stocks.

Passing finally to *Gallus Bankiva*, we find this fowl more largely distributed than the others; that it almost precisely resembles an existing breed; that it varies in colour and somewhat in size (these two being perhaps the strongest points of all in favour of its claims); and that its hybrids appear to breed freely with either of the parent stocks. On the other hand, the crow of the cock, though very similar to that of the Game, is admitted to be shorter, as if the last note were broken off. It remains to be proved if the hybrids would breed among themselves; and—what deserves particular mention—the neck-hackles when first moulted are replaced, not by the true hackles, but by short dark grey or black feathers, which remain for two or three months before they are replaced by the new hackles. It is true Mr. Darwin quotes Mr. Brent as stating that these black feathers appear in the domestic cock also, but in his case contemporaneously with the hackles; remaining in both after the hackles have grown. We think, however, that Mr. Brent must have examined Game Fowls chiefly; for we have examined many other breeds at the moulting season, and been utterly unable to find these black feathers at any stage of the process, except in some (not all) Game Fowls; and it is worthy of note that this is the breed which most closely resembles the *Gallus Bankiva* in other respects.

Summing up the whole, it appears that the barrenness of the hybrids of *Gallus Sonneratii* is at best exceedingly doubtful, having more than probably resulted in great part from injudicious treatment, and disappearing in a great degree under more natural conditions; while the peculiar plates quickly disappear, and the wild blood is readily absorbed into the domestic; we find also that the crow, though peculiar, is described by one of the most experienced breeders as "not so very unlike a Bantam's;" while Colonel Sykes also compares it to that of a Bantam. We find the barrenness of hybrids of *Gallus Stanleyii* rests entirely on the evidence of two specimens; while we also find that this race is apparently the most of all impatient of confinement, and has "never yet bred in captivity," even *when pure;* and we further find that the symptoms of reversion in domestic breeds point to the colour of this variety rather than to the one usually regarded as the parent. We find a strong tendency to approach more or less to *every* peculiar point of the *Gallus furcatus* in a domestic Asiatic breed; while this latter breed also possesses a feature—the *triple* comb—to which *other* Asiatic races show a strange tendency still to revert. And of the *Gallus Bankiva*, it is found that the voice differs in some degree; that it has a peculiar feature—the temporary black hackle—which only appears to be found in the domestic breed most closely resembling it, and not always even in that; whilst the perfect fertility of its hybrids still remains to be ascertained, and for all that appears is in no respect greater than that of the Sonnerat.

What are we then to suppose? That the *Gallus furcatus*, for instance, was the progenitor of the Brahma, just as the *Gallus Bankiva* almost unquestionably was of the Game? By no means: no naturalist would come to any such conclusion. What we think *is* clear, is simply that there are tendencies in some of our domestic breeds which certainly are not due to the *Gallus Bankiva*, and which, as they *are* found in the *Gallus furcatus*, are probably the result of natural rather than artificial development; a conclusion which is strengthened by the fact that another feature of *Gallus furcatus*, not usually found in the domestic breed most resembling it, still appears occasionally by reversion in that same breed. Hence, we are disposed to think the original type can only be found still further back; that it diverged into various sub-types, including the four wild breeds

still known; and developed through the *Gallus Bankiva* into the Games, while other breeds were reached through collateral branches, now either extinct, or possibly still further modified into the present other three known races. It is no objection whatever to such a theory that "the four *known* species have *not* become extinct," as Mr. Darwin says; the simple fact being that such four are "known" merely *because* they are "not extinct." That one of these collateral branches was of great size, and in most points resembled the Brahma more than either Cochin or Malay, we think probable. We shall see that the turkey rather degenerated than increased in size by domestication; and we shall also see that clever naturalists in *that* case resorted to the theory of an extinct breed on very far slighter grounds than those we have briefly sketched out. We have no wish to drag the *odium theologicum* into such a work as this; but we may at least legitimately remark that those who believe, on what they consider sufficient grounds, that various races of animals (how many distinct races we need not say; we have not the slightest doubt that some have developed into many varieties, or that the horse and the ass, for instance, may have sprung from one progenitor) were created by a great Master Workman in great degree for the use of man, the highest of his creatures, may be pardoned if they also believe that such a Workman may possibly and probably have created them originally in a shape adapted for his use, and that, in becoming feral, many of them may have degenerated, and become less adapted for such purposes than the first type originally was. More positive conclusions than these, we do not feel at present that there are facts enough to enable us to frame.



CHAPTER XXXII.

THE GUINEA FOWL.

UNDER the general head of Guinea fowls, or the genus *Numida*, naturalists have grouped many so-called varieties; but it is very doubtful whether these are even so distinct as the various races of ordinary domestic poultry. The fact that all belong to some part of Africa alone makes a common origin almost certain; and although there is no doubt that the various kinds breed true, that is no more than can be said of the Spanish, Poland, or other common domestic fowls. Many of these sub-races have been crossed, and we believe in every case the progeny have proved fertile, which most naturalists consider evidence of at least close identity; though the whole question of species and what constitutes species needs much more in the way of investigation than it has ever yet received.

Of these various races of Guinea fowls, some have a peculiar bony helmet on the top of the head, while others have this replaced by a crest of feathers, the shape and size of which crest varies in different so-called varieties; and in a third variety which does appear to have some real distinctiveness, there is neither crest nor helmet, and such a resemblance to the vulture generally that the bird has been graphically termed the Vulturine Guinea Fowl. Of the first or helmeted group Mr. Elliot and other naturalists have described some half-dozen varieties, but in our opinion several of these are practically identical. The Common Guinea Fowl of West Africa, or *Numida meleagris*, has for a long time been regarded as the original of our domestic race, though some authorities lately have objected to this view, on the ground that as the bird is admitted to have been known to the Romans, and they had more intercourse with the Egyptian side of the great African continent than with the western, one of the varieties common in Abyssinia is more likely to have been the original. We think the common view by far the more likely to be correct. Not only is the name entitled to some weight in a case of this kind, but when residing at Bristol, which is a considerable centre of the West African trade, we have on several occasions seen Guinea fowls perched on the rigging of African vessels, which had been brought from the coast by sailors; and in every case these birds were obviously identical with the domestic breed, both in head and plumage.

The Vulturine Royal Guinea Fowl, as it is called, certainly does present very peculiar and singular characteristics. The neck and tail are very long in comparison with the common variety, and the other points have been described as follows:—The head and upper part of the throat are destitute of feathers, but sprinkled with hairs of a black colour, which are longest on the neck; the nape is thickly clothed with short, velvet-like, brown down; and the lower part of the neck ornamented with long, lanceolate, and flowing feathers, having a broad stripe of white down the centre, to which on each side succeeds a line of dull black, finely dotted with white, and margined with fine blue. The feathers of the inferior part of the back are of similar form, but broader, with a narrower line of white down the centre, and with the minute white dots disposed in irregular and obliquely transverse lines. The wing-coverts, back, rump, tail, under tail-coverts, and thighs, are

blackish brown, ornamented with numerous round and irregular spots of white surrounded by circles of black, the intermediate spaces being filled by very minute spots of dull white; the primaries are brown, with light shafts and spots of brownish white on the outer web; the secondaries brownish black on the tips, with three imperfect lines of white disposed lengthwise on the outer web, and three rows of irregular spots of white on the inner web; the breast and sides of the abdomen are of a beautiful metallic blue, the centre of the abdomen black, the flanks dull pink, with numerous spots of white surrounded by circles of black; the bill is brownish, and the feet brown.*

Mr. Gould writes of this magnificent variety of Guinea fowl:—"Independently of the chaste and delicate markings which adorn the whole of this tribe, the neck of the present species of Guinea fowl is ornamented by a ruff of lanceolate flowing plumes; which new feature, as well as the head being entirely devoid of fleshy appendages, render it conspicuously different from all its congeners. It is certainly one of the most noble birds that has been discovered for some years; and we indulge in the hope that the period may not be far distant when we shall become better acquainted with the species, and that living individuals may even become denizens of our menageries and farm-yards, where they would doubtless thrive equally well as their congener so familiar to us all."

It is the long neck adorned with lanceolate feathers, the absence of casque or crest, and the long tail and legs, which give this bird so strange a resemblance to the vulture. It has been introduced into one or two menageries; but there is little probability as yet of its being introduced as farm stock. We may here repeat our remark in the last chapter, that even the most intelligent keeper of a zoological institution is not the most likely person to multiply and naturalise a new race of poultry; his knowledge is not special enough, and in this particular walk is far surpassed by that of any intelligent and enthusiastic poultry amateur. Instead of merely giving prizes for rearing, as was once done in relation to curassows, a zoological society would act in a manner far more likely to attain its object, were eggs or stock of the desired new variety to be given to such amateurs of skill and standing as were willing to accept them, and had at command the ample space they so imperatively require; when the most special care would be given, and all that skill, intelligence, and enthusiasm could suggest would be cheerfully lavished upon the new breed, in a way which no public institution can ever secure.

The domestic Guinea fowl in ordinary circumstances can hardly be considered profitable poultry, but its character has nevertheless been considerably belied. We have heard it said that it could not be kept on account of the screeching noise it makes; but we cannot understand how any one objecting on that ground can abide the noise of an ordinary cock, much less of an ordinary farm-yard; since, disagreeable as the cry is (resembling the noise of a creaking axle more than anything else we can think of), it is very seldom heard near the house. Sounder objections are found in the straying proclivities of the fowl; its disposition to lay away, by which many eggs are lost; and its pugnacious habit of beating other varieties of poultry. But for this latter trick it would long since have been naturalised as a game bird, having been turned into covert with perfect success; but it was soon found that the Guinea fowls drove away other descriptions of game to such an extent that the birds had to be destroyed on that account, the pheasants being most valued.

As a domestic bird, however, these bad qualities are susceptible of much amelioration, provided the treatment be kind and good. It is almost hopeless to commence a stock with adult birds; directly they are left at liberty they are "off," and probably never return. But by setting eggs under common hens, and rearing them at home, they grow up much tamer, and will flock

* "Cassell's Book of Birds," Vol. III., p. 256.

round the person who feeds them, and even allow themselves to be taken up and petted, like other poultry. When reared thus kindly, and secluded nests are provided, they will generally lay in the house; and if perches are placed high for them, and they are regularly fed every night, will roost at home also. So far domesticated they will pay to rear, in places where they can have ample range, for their flesh alone, which is most delicious, resembling that of the pheasant. The hen lays from 60 to 100 eggs per annum, the eggs being rather small, very pointed at the end, and of a dark cream-colour. These eggs are of beautiful flavour, and there is considerable demand for them in London, where we have often seen them exposed for sale in little baskets lined with green moss.

Mr. Hewitt kindly adds a few remarks which places their utility in what we must confess is to us a novel light, and which it may be well to "make a note of." He writes: "As to Guinea fowls, if allowed to breed wild and become numerous, they will invariably displace *all* the pheasants in any covert they may take to, if not interfered with; and as when thus wild they will run before dogs with all the pertinacity of the cornerake, they afford but little sport for the gun. It may be added, the flavour of the birds thus allowed unrestrained liberty is certainly improved, and more game-like than ordinary, becoming more like that of the partridge than the pheasant. Although thus unsuitable for sport, it must be constantly borne in mind no birds are better house-guards, if allowed constantly to roost in high trees (which they will always do if they can) near the residence of their owners. It is with them, as with Spanish geese—'nothing can stir about in the night without their becoming aware of it; and they as invariably give notice of it by their restless cries, so that to be forewarned of danger is half the battle.' Such were the remarks written to me by a friend long since dead, and who added, 'I am sure, Mr. Hewitt, in all these years I have rested safely, without *any* robbery, though our place is desolate enough to invite pilfering, well knowing my Spanish geese and the Guinea fowls were the best watch-dogs in the neighbourhood; in fact, the dogs almost invariably give us only the *second* notice of coming danger—indeed, my impression certainly is the dogs themselves as confidently rely on the geese and Guinea fowls as we ourselves do.'"

The Guinea hen seldom sits herself until August, when chicks are always somewhat difficult to rear. Hence it is advisable to set the earlier eggs under hens, which not only avoids this difficulty, but brings them up tamer. The period of incubation is generally twenty-six days, not twenty-eight as often stated. If the eggs are removed daily, in the hen's absence, she will not forsake the nest, provided one be left in it as a nest-egg; but if several are allowed to accumulate and then removed, she will seek another, concealing the second nest most carefully. The chickens are said to be very delicate; but this arises from the small size of their crops, which will not contain enough food to last them nearly so long as those of other chickens do. Hence they need feeding *every half-hour;* and, if thus treated, may be reared at least as easily as turkeys. They grow fast, as already stated. Ordinary good chicken diet, such as ground oats, will suit them; but they require rather more animal food, such as chopped egg or cooked meat. We once, in our young days, reared a chick from an egg given us, in the small stone-paved yard we have on a previous occasion referred to; and this solitary chick always appeared to do well enough even there, till an accident, such as *will* happen in the best-regulated families, brought it to an untimely end.

The youngsters have amazingly thick and strong legs compared with other chickens, and become able to "paddle their own canoe"—and at a surprising rate too—at a very early age. The young chicks are very pretty, the body being brown, beautifully striped, and the legs and bill a deep orange red. The adult weight varies from three to four pounds, the latter being rarely exceeded, though odd birds have been known to reach more. The plumage being very plentiful, the bird when plucked is smaller than it would appear.

There is no doubt whatever that in a state of nature the Guinea fowl is monogamous, or pairs; but two hens may safely be allowed to one cock in captivity. With more than this the result is doubtful; we have known persons put as many as four hens without harm, but in other cases such an experiment has not succeeded. The cock calls his hens to a choice morsel of food much as the common chanticleer does; apart from this and other obvious demonstrations, the gender is somewhat difficult to distinguish. One mark of the sexes is the cry, the hen alone uttering the peculiar note which almost every one has compared to the words "Come back!" uttered in a shrill tone, and which we may almost imagine to have been acquired from the cries of despairing hen-wives, in entreaties oft repeated to these errant ladies. Cock birds may also be distinguished by their arching their backs, and running along on tip-toe with a mincing air; they are also more spiteful than the hens to other poultry. Another mark of sex is that the wattles of the male are larger than those of the female, and rather differently placed.

An American writer states that he has kept nine hens to one cock, and that nearly all the eggs were good. He adds that the nine hens averaged 122 eggs each during the year. In neither point does this experience agree with what we have been able to collect from English breeders; but the warm summer climate and plentiful grain-supply of the United States must be taken into consideration.

We have seen that even in the wild state the Guinea fowl varies in colour; and still more variation might be expected to occur under domestication, which is accordingly the case. The ordinary fowl retains the original marking with great uniformity, being a number of small white spots over a purplish grey ground. This is sometimes called the *Pearl* Guinea Fowl, from the supposed resemblance of the spots to small pearls. Occasionally these colours are found reversed, the spots being dark and the ground light, which produces a most curious effect. White Guinea fowls are also well known, and by crossing these with the dark varieties, pied fowls have been produced. The White variety has been stated to be the result of domestication; but Ellis, in his "Three Visits to Madagascar," writes: "Among the companions of my journey was an officer, attended by a slave carrying in a neatly-made wicker cage a pair of perfectly white Guinea fowls, as a great rarity, and a present from the chief of a distant province to the prince." Madagascar being a well-known *habitat* of the fowl in question, and having at least one sub-race or variety of its own, it is almost certain the birds here described were simply a rare sport, like the white elephants of India. Blue and dun birds, almost or even quite destitute of spots, are often met with; but the ordinary or "pearl" plumage is far the most common. Mr. Hewitt remarks that "unless the birds are *wholly* white, white feathers in any part, even in the flight-feathers, are most unsightly and objectionable in a Guinea fowl."

The Guinea fowl is found wild in the Cape Verde Islands, and also in Jamaica, to both of which there is no doubt it has been carried from Africa. In spite, however, of its great elegance of form and feather, it is rarely seen at shows; the reasons being, Mr. Hewitt states, that they are in the first place "so hard to catch," and when caught look so restless and unhappy in a pen. On one or two occasions we have found classes for them, and in such cases have always noticed that they were much admired, especially by ladies. In judging them when shown, no fixed standard can be laid down; but size, general symmetry, good condition, and elegance of plumage and general appearance must be taken into consideration.

Hybrids are not very uncommon between the Guinea fowl and other poultry. The last case we knew of was between the Guinea fowl and Dark Brahma. In this, as in all other instances we have heard of, the progeny was very wild and perfectly sterile. The Guinea fowl has also been known to cross with the turkey-hen.

CHAPTER XXXIII.

THE TURKEY.

LITTLE or no doubt is now entertained by competent naturalists that the domestic Turkey is the legitimate descendant of the wild bird of North America, or of the sub-race found in Mexico, and only to be distinguished from it by the presence of white in the tail-coverts and tail. A few years back, however, very different opinions were held; and so lately as 1866, Mr. Tegetmeier, following Professor Baird's great work on the Ornithology of North America, in which he strongly maintains that there must have been formerly another species of wild Turkey now extinct, from which the domestic bird is derived, went so far as to affirm that "if there is one fact more clearly ascertained respecting the domestic Turkey than another, it is that it is certainly not descended from the common wild American species, as is generally stated by the compilers of the greater number of our works on poultry."* One of the chief facts relied upon in support of this view, besides the absence of any white in the plumage of the wild bird, was the alleged impossibility of domesticating it, or crossing it with the tame, which was supposed to be established by sufficient testimony, Captain Flack especially being quoted as to this supposed fact. The result, however, may not only serve to show how cautiously all statements of such a nature should be received, but may throw light upon the reasons why they often remain uncontradicted, and on the best means of acquiring fuller information. Had the opinion above quoted, like Professor Baird's, been published only in a scientific work, it would probably have yet remained uncorrected; but being made in a work on poultry, it attracted the attention of *poultry-breeders*, who in this case are the parties most capable of throwing light upon the matter. Accordingly, Mr. Tegetmeier's statements were quickly followed by the subjoined communication, addressed by Mr. F. W. Andrews, of Quebec, to one of the poultry periodicals of 1869:—

"I was surprised," he says, "to find it stated by Mr. Tegetmeier, in one of his compilations, 'that though thousands of wild turkeys have been hatched under barn-door fowls, they have invariably strayed off the following spring to their wild kindred in the forests, with whom they have remained, and all attempts to retain the wild Turkey as a barn-yard fowl have completely failed.' Now, if this error, for error it most unquestionably is, has not been before refuted in your columns, perhaps you may deem the following notes on the matter worth publishing. The facts are all the other way, so much so that at the principal poultry-shows in Canada, prizes are regularly offered for the best specimens of domesticated wild turkeys. I myself have now in my possession a flock of these beautiful birds; and though the old patriarch thereof, a splendid fellow, answering exactly to the description of the male wild Turkey given on the same page of Mr. Tegetmeier's book, has often strayed away, and once remained away for two nights, he always concludes it is best to come back to his wives and children, and especially to his food. He was hatched from an egg laid in the woods by the wild birds.

"I have raised, and now own, both the pure wild turkeys and the half-breds, but greatly prefer the former, as being infinitely the handsomer, the larger, and much the hardier. I did not lose a chick last year by disease of any kind. Instead of being stupid, like the common Turkey,

which is so stupid that the French here always say, '*Hébété comme une dinde*' ('As stupid as a Turkey'), the wild turkeys are wonderfully intelligent. One mode, however, in which they showed their intelligence to me was rather unprofitable. I gave to one of the hens a sitting of Light Brahma eggs, and she sat upon them faithfully; but when the first unfortunate chick made its appearance, recognising it was none of hers, she straightway carried it out of the nest and put it to death, and so with the second and third; then, apparently despairing of the rest, she destroyed her nest and left it in disgust. A common Turkey sitting near her raised with the greatest complacency a brood of Aylesbury ducks.

"That it would be difficult to begin the domestication of these birds in places situated near the haunts of the wild ones I have no doubt; but that it can be done in other localities, and has been done in many places in Canada, is certain."

This, we believe, was the first published correction of the singular error in question; but shortly afterwards Colonel F. C. Hassard, an enthusiastic poultry and pigeon amateur, for some time stationed in Canada, returned to England, and furnished Mr. Tegetmeier himself with a very similar contradiction, which that gentleman frankly quotes in the last edition of his work, at the same time altogether cancelling the expression of his former opinion. The testimony quoted by us from Mr. Simpson is alone amply sufficient; and it may now be regarded as conclusively settled that the wild Turkey both can be and constantly has been domesticated, and that it is, as was all along generally supposed, *except by naturalists*, the progenitor of the domestic race. Mr. Darwin* practically throws the weight of his opinion into the same scale, showing that, as the Turkey degenerates in India, it cannot have been originally a tropical bird, and thus inferentially arguing that it originated in a colder clime. He also, with regard to the alleged absence of white as a specific mark in the wild bird, quotes from Dr. Bachman, who states† "that he has seen turkeys raised from the eggs of the wild species lose their metallic tints, and become spotted with white in the third generation;" and as the absence of white has always been considered the most distinguishing characteristic of the wild species, this remark is of peculiar significance, removing indeed the sole objection to the common theory regarding the ancestry of the domestic bird.

We have in other portions of this work quoted some rather queer guesses at the supposed origin of the names of fowls; but in endeavouring to account for an American bird being called a *Turkey*, ingenious speculators have surpassed themselves. Some have thought that as the name of "Turk" is bestowed upon any one remarkable for domineering or pompous manners, the "bumptiousness" of the turkey-cock procured him the same title; others, that it is a corruption of *Turquoise* cock, in allusion to the blue wrinkles about the head; and yet others, that the name arose from the supposed resemblance to the old Turkish military uniform of a red fez coming down to the ears, with a dark flowing robe! For ourselves—we give it up altogether.

No one has given a better account of the habits of the wild Turkey than Audubon; who, with Waterton and Agassiz, form a triumvirate who have never been surpassed for the enthusiastic ardour with which they patiently observed the facts which they recorded, rather than compiled them from the reports of others. Accordingly, it will be seen that Audubon never fell into the error of stating that the bird could not be domesticated; but affirms the contrary, even mentioning a bird of his own which he had tamed. From his account we extract the following:—

"The unsettled parts of the States of Kentucky, Ohio, Illinois, and Indiana, an immense extent of country to the north-west of those districts upon the Mississippi and Missouri, and the

* "Variation of Animals and Plants under Domestication," Vol. I., p. 292.

† "Examination of the Characteristics of Genera and Species," Charleston, 1855, p. 14.

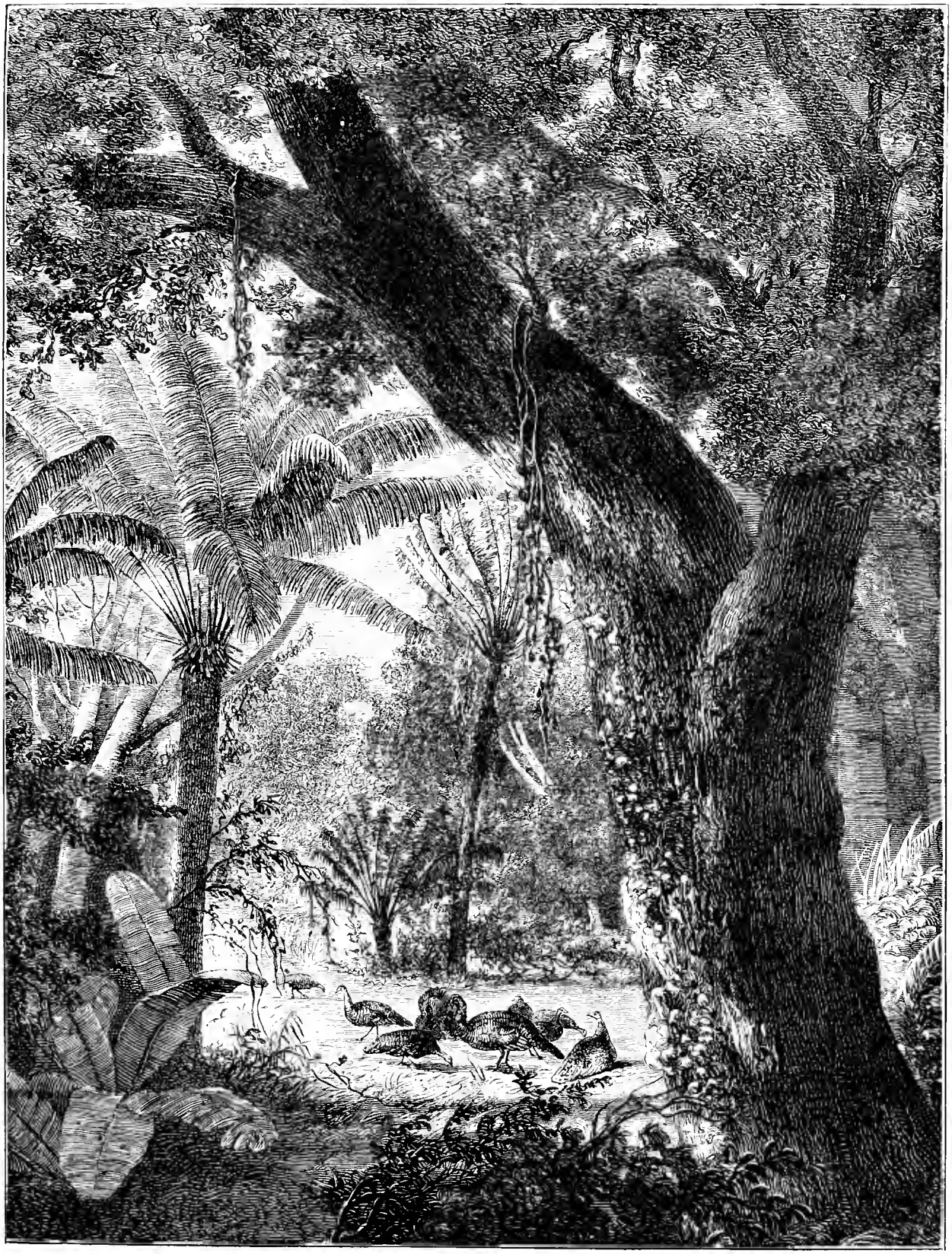
vast regions drained by these rivers from their confluence to Louisiana, including the wooded parts of Arkansas, Tennessee, and Alabama, are most abundantly supplied with this magnificent bird. It is less plentiful in Georgia and the Carolinas, becomes still scarcer in Virginia and Pennsylvania, and is now very rarely seen to the east of the last-mentioned States. It is already extirpated from the thickly-peopled portions of the continent.

"The Turkey," continues Audubon, "is irregularly migratory, as well as irregularly gregarious. When the supply of food in one portion of the country happens greatly to exceed that of another, the turkeys are insensibly led towards that spot, by gradually meeting in their haunts with more fruit the nearer they advance towards the place where it is most plentiful. In this manner flock follows after flock, until one district is entirely deserted, while another is, as it were, overflowed by them.

"About the beginning of October, when scarcely any of the seeds and fruits have yet fallen from the trees, these birds assemble in flocks, and gradually move towards the rich bottom-lands of the Ohio and the Mississippi. The males, or as they are more commonly called, the 'gobblers,' associate in parties of from ten to a hundred, and search for food apart from the females; while the latter are seen advancing singly, each with its brood of young, then about two-thirds grown, or in connection with other families, forming parties amounting to seventy or eighty individuals, all intent on shunning the old cocks, which, even when the young birds have attained this size, will fight with and often destroy them by repeated blows on the head. Old and young, however, all move in the same course and on foot, unless their progress be interrupted by a river, or the hunter's dog force them to take wing. When they come to a river they betake themselves to the highest eminences, and there often remain a whole day, or sometimes two, as if for the purpose of consultation. During this time the males are heard gobbling, calling, and making much ado, and are seen strutting about as if to raise their courage to a pitch befitting the emergency. Even the females and young assume something of the same pompous demeanour, spread out their tails and run round each other, purring loudly and performing extravagant leaps. At length, when the weather appears settled, and all around is quiet, the whole party mount to the tops of the highest trees, whence, at a signal consisting of a single cluck given by a leader, the flock takes flight for the opposite shore. The old and fat birds easily get over, even should the river be a mile in breadth; but the young and less robust frequently fall into the water, not to be drowned, however, as might be imagined. They bring their wings close to their body, spread out their tail as a support, stretch forward their neck, and striking out their legs with great vigour, proceed rapidly towards the shore, on approaching which, should they find it too steep for landing, they cease their exertions for a few moments, float down the stream until they come to an accessible part, and by a violent effort generally extricate themselves from the water. It is remarkable that immediately after thus crossing a large stream, they ramble about for some time as if bewildered; in this state they fall an easy prey to the hunter.

"When the turkeys arrive in parts where food is abundant, they separate into smaller flocks, composed of birds of all ages and both sexes, promiscuously mingled, and devour all before them. This happens about the middle of November. So gentle do they sometimes become after these long journeys, that they have been seen to approach the farmhouses, associate with the domestic fowls, and enter the stables and corn-cribs in quest of food. In this way, roaming about the forests, and feeding chiefly on mast, they pass the autumn and part of the winter.

"As early as the middle of February the females separate and fly from the males; the latter strenuously pursue, and begin to gobble or to utter their notes of exultation. The sexes roost apart, but at no great distance from each other. When a female utters a call-note, all the gobblers within hearing return the sound, rolling note after note with as much rapidity as if they intended to



Wild Turkys at Home.

emit the first and last together, not with spread tail, as when fluttering round the females on the ground, or practising on the branches of the trees on which they have roosted for the night, but much in the manner of the domestic Turkey, when an unusual or unexpected noise elicits its singular hubbub. If the call of the female comes from the ground, all the males immediately fly towards the spot, and the moment they reach it, whether the hen be in sight or not, spread out and, erect their tails, draw the head back on the shoulders, depress their wings with a quivering motion and strut pompously about, emitting at the same time a succession of puffs from the lungs, and stopping now and then to listen and look; but whether they spy the female or not they continue to puff and strut, moving with as much celerity as their ideas of ceremony seem to admit. While thus occupied the males often encounter each other, in which case desperate battles take place, ending in bloodshed and often in the loss of many lives, the weaker falling under the blows inflicted upon the head by the stronger. The moment a rival is dead the conqueror treads him under foot, but what is strange, not with hatred, but with all the motions which he employs in caressing the female.

"About the middle of April, when the season is dry, the hens begin to look out for a place to deposit their eggs. This place requires to be as much as possible concealed from the eyes of the crow, as that bird watches the Turkey when going to her nest, and, waiting in the neighbourhood until she has left it, removes and eats the eggs. The nest, which consists of a few withered leaves, is placed on the ground, in a hollow scooped out by the side of the log, or in the fallen top of a dry leafy tree under a thicket of sumach or briars, or a few feet within the edge of a cornbrake, but always in a dry place. When laying her eggs the female approaches her nest very cautiously, scarcely ever following the same track twice, and when she leaves them covers them so carefully with leaves that it is very difficult for any person to find the nest, unless the mother has been suddenly started from it. When on her nest, if she perceives an enemy, she sits still and crouches low until the intruder has passed by, unless she is aware that she has been discovered. I have frequently approached within five or six paces of a nest, of which I was previously aware, assuming an air of carelessness, and whistling or talking to myself, the female remaining undisturbed; whereas if I went cautiously towards it, she would never suffer me to approach within twenty paces, but would run off, with her tail spread on one side, to a distance of twenty or thirty yards, when, assuming a stately gait, she would walk about deliberately, uttering now and then a cluck."

He describes the actual hatching-out of a brood, which he once witnessed, as follows:—

"I concealed myself on the ground, within a very few feet, and saw the female raise herself half the length of her legs, look anxiously upon the eggs, cluck with a sound peculiar to the mother on such occasions, carefully remove each half-empty shell, and with her bill caress and dry the young birds that already stood tottering and attempting to make their way from the nest. I saw them all emerge from the shell, and in a few moments after tumble, roll, and push each other forward, with astonishing and inscrutable instinct."

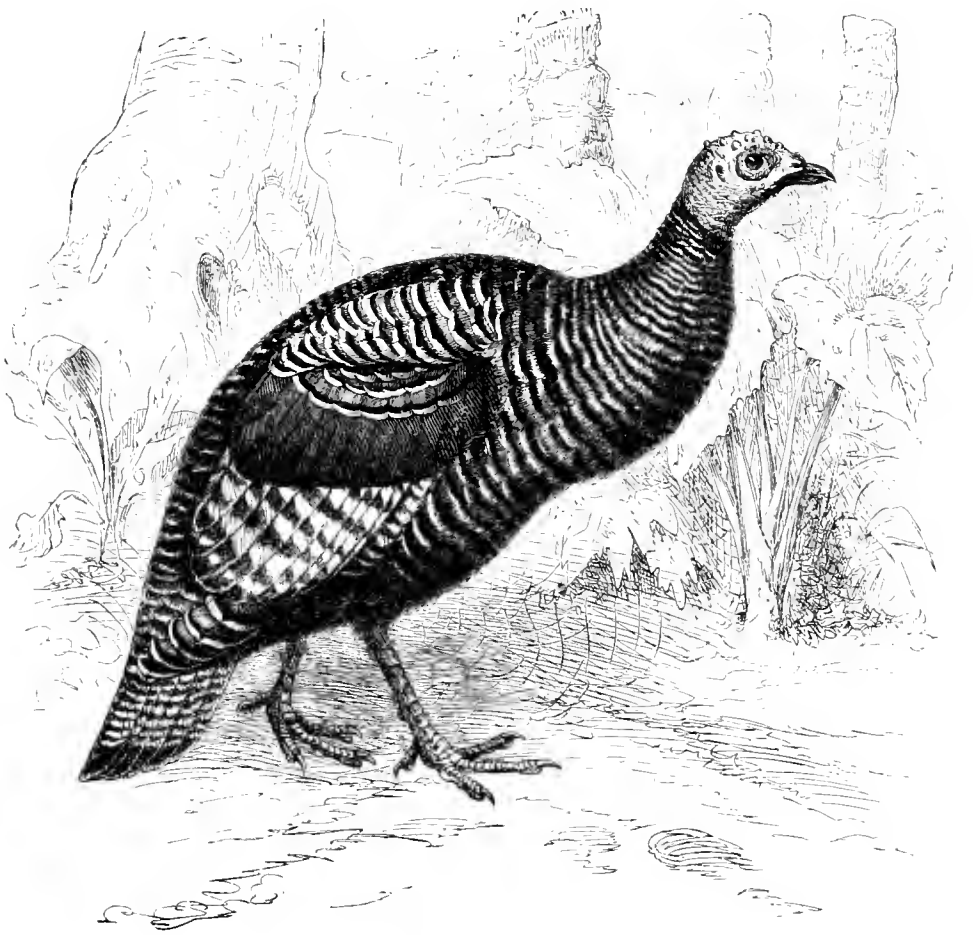
On the subject of domestication Audubon clearly states that the wild Turkey frequently feeds, breeds, and associates with the tame ones, the owners of which do all in their power to facilitate such unions, the half-bred bird being much hardier in constitution. He gives an interesting account of a wild gobbler of his own, which we quote. "While at Henderson," he says, "I had among other birds a fine male turkey, which had been reared from its earliest youth under my care, it having been caught by me when probably not more than two or three days old. It became so tame that it would follow any person who called it, and was the favourite of the little village; yet it would never roost with the tame turkeys, but regularly betook itself at night to the roof of the house, where it remained till dawn. When two years old it began to fly to the woods, where it

remained for a considerable part of the day, returning to the enclosure as soon as night approached. It continued this practice until the following spring, when I saw it several times fly from its roosting-place to the top of a high cotton tree on the Ohio, from which, after resting a little, it would sail to the opposite shore, the river being nearly half a mile wide, and return towards night. One morning I saw it fly off at a very early hour to the woods, in another direction, and took no particular notice of the circumstance. Several days elapsed, but the bird did not return. I was going towards some lakes near Green River, to shoot, when having walked five miles I saw a fine large gobbler cross the path before me, moving leisurely along. Turkeys being then in prime condition for the table, I ordered my dog to chase it and put it up. The animal went off with great rapidity, and as it approached the turkey, I saw with much surprise that the latter paid little attention. Juno was on the point of seizing it, when she suddenly stopped and turned her head towards me. I hastened to them, but you may easily conceive my surprise when I saw my own favourite bird, and discovered that it had recognised the dog and would not fly from it, although the sight of a strange dog would have caused it to run off at once."

Audubon describes as follows the ordinary way in which wild turkeys were taken in pens or traps:—"Young trees of four or five inches in diameter are cut down and divided into pieces of the length of twelve or fourteen feet. Two of these are laid on the ground parallel to each other, at a distance of ten or twelve feet. Two others are laid across the ends of these at right angles to them, and in this manner successive layers are added until the fabric is raised to the height of about four feet. It is then covered with similar pieces of wood, placed three or four inches apart, and loaded with one or two heavy logs to render the whole firm. This done, a trench about eighteen inches in depth and width is cut under one side of the cage, into which it opens slantingly and rather abruptly. It is continued on its outside to some distance, so as gradually to attain the level of the surrounding ground. Over the part of this trench within the pen, and close to the wall, some sticks are placed so as to form a kind of bridge about a foot in breadth. The trap being now finished, the owner places a quantity of Indian corn in its centre, as well as in the trench; and as he walks off, drops here and there a few grains in the woods, sometimes to the distance of a mile. This is repeated at every visit to the trap after the turkeys have found it. No sooner has a turkey discovered the train of corn than it communicates the circumstance to the flock by a cluck, when all of them come up, and searching for the grains scattered about, at length come upon the trench, which they follow, squeezing themselves one after another through the passage under the bridge. In this manner the whole flock sometimes enters, but more commonly six or seven only, as they are alarmed by the least noise, even the cracking of a tree in frosty weather. Those within having gorged themselves, raise their heads, and try to force their way through the top or sides of the pen, passing and repassing on the bridge, but never for a moment looking down or attempting to escape by the passage by which they entered. Thus they remain until the owner of the trap arriving closes the trench and secures his captives. I have heard of eighteen turkeys having been caught in this manner at a single visit to the trap."

The progress of civilisation in the United States is however thinning the wild Turkey fast, and at no distant date the breed must become extinct, except so far as preserved in its descendants. Contrary to what is usually the case, domestication in the case of the Turkey has not improved, but rather reduced hardiness and even size; for the wild bird is far larger than any known in England, until recent importations from the States of stock containing the wild blood. They have been shot weighing nearly *sixty pounds*, and carrying the head four feet above the ground. The head and neck differ from the domestic race in being less red and more of a blue colour; the legs are red or pink; and the prevailing colour of the plumage is a splendid copper bronze, changing

to a resplendent green-black or purple, and showing in the sun the most magnificent chromatic tints, which no portrait can possibly reproduce. Most of the feathers on the body are margined with black, but there is a *total* absence of pure white on any feather of the whole body, this feature being one distinct mark of the pure wild American breed, though almost every other colour may be observed under the play of light upon the plumage. The latter is very close and hard, so that the bird weighs more even than the apparent size would lead any one to suppose. The eyes are bright hazel. The hairy tuft on the breast of the male is often nearly a foot long. This feature is often



OCELLATED TURKEY (AFTER DR. BREHM).

absent in the female, which is not much more than half the size of the male, or "gobbler," and is also much less gorgeous in colour.

Our coloured plate is taken from a bird sent over specially by Mr. W. Simpson, and which he states to be of pure wild descent, but *bred in confinement*, being the produce of old wild birds. He showed his wild blood in a very marked manner on arrival in England, but gradually settled down in his new quarters. It should be noted that the attitude by no means represents that of the wild Turkey when at liberty, as it was found impossible to take any portrait of him except in a small pen, which of course took away from the free carriage which is so striking when at liberty. This bird was of moderate size, but splendid in colour and condition.

The Mexican Turkey (*Meleagris Mexicana*) scarcely differs from the above, as before stated, except in the presence of white among the tail-feathers and tail-coverts. It breeds freely with either the wild or domestic races, and is quite evidently only a sub-variety of colour, descended, and barely distinguishable even now, from the ordinary wild bird of the United States.

More distinction, however, may be observed in the splendid Honduras or Ocellated Turkey (*Meleagris ocellata*), found in Honduras, Yucatan, and throughout Central America; though even this variety is found to breed freely with the domestic birds, the progeny being fertile. In this variety of Turkey, besides the difference of plumage, the hairy tuft on the breast is absent, and the lower part of the naked portion of the neck is not carunculated as in the common bird. The plumage, however, presents the most striking difference, presenting a ground-colour chiefly of the most beautiful bronzed green, banded with gold-bronze, brilliant black, and lower down the back with intense blue and red, resembling shot silk. Near the tail these bands are so sharp as to make the feathers appear almost as if "ocellated" or eyed, as in the tail of the peacock, from which the bird takes its name. The pea-fowl itself could scarcely be more brilliant in appearance, and it is much to be wished that so glorious a bird could be added to our yards; but all attempts hitherto made in this direction have failed. The bird breeds freely, but appears so far to be too delicate for any but a tropical climate, and all as yet imported have died, in some cases however leaving hybrids. In reply to an inquiry of our own, Mr. W. Simpson, Jun., from whom our notes on the American Bronze Turkeys were obtained, informed us that he had himself made several attempts to introduce the Ocellated Turkey north, but that he too had equally failed. He intended however to repeat his attempts in a more cautious manner, and entertained some hope that, by leaving the next specimens he could obtain to breed in the care of friends in the more southern States of the Union, he might get the stock more gradually acclimatised. A breed of such extreme beauty is certainly well worth every effort in this direction, more especially as it appears more naturally inclined to domestication than the wild North American variety.

No really authentic portrait of the Honduras Turkey taken from life exists, so far as we are aware. The best we have seen is that given by Dr. Brehm, but it appears from the attitude to be drawn from a stuffed bird.

Passing from the wild Turkey to the domestic bird and its management, we may observe that this too seems to have merged into three tolerably marked and definite varieties, known as the Norfolk Turkey, the Cambridge, or variegated variety, and the beautiful "bronzed" Turkey recently introduced from North America.

The counties of Norfolk and Cambridge have long been celebrated for the immense number of turkeys they send to the London market, and which constitute a trade as well marked as the poultry-raising which we have already described as carried on in Surrey and Sussex. As a few particulars in this case also may prove both useful and interesting, we extract the following remarks from a paper by Mr. H. H. Dixon in the Journal of the Royal Agricultural Society:—

"The eastern counties," he says, "may be said to have pretty nearly a monopoly of our English turkey raising and feeding. Hen-wives are generally 'afraid to meddle with them,' on the score of delicacy; but if the requisite food and attendance are not found to be thrown away in Norfolk, Cambridgeshire, &c., why should they be elsewhere, except in an essentially damp climate? They must be tenderly reared, and not 'dragged up,' as the saying is.

"The Norfolk Turkey is black, with a few white spots on its wings. The Cambridgeshire Turkey is of a bronze grey, and rather longer in the leg and bigger in the bone. Very few white ones are to be seen, as they are supposed, like a white long-horn cow, to be more delicate. The adherents of the Norfolk Blacks consider that they lay on more flesh, and that it is whiter and

finer in texture than that of the Cambridgeshire Bronze; but as a rule the latter sort predominates in the East Anglian stubbles, and comes to the greatest weight. A good April-hatched cock at Christmas should average about eighteen pounds in his feathers, and the hen-bird about ten or eleven pounds in November, with ordinary feeding; but if they have been 'sent along' with Indian corn, barley-meal, rice, and potatoes, they will make up to nearly two pounds heavier. The small Norfolk farmers generally keep a cock and three or four hens, and consider fifteen an excellent brood. The best broods are always hatched in April; and the second brood, which never comes to the same maturity, and is eaten at poult estate, follows in June or July. A September hatch too often realises the rustic prophecy, 'They'll never be fit, they won't live long enough.' Cramp in the legs is very fatal to the broods; but it only kills them by lingering stages, and a disease in the head very often effects 'a highly successful elimination.' Wet is the young Turkey's greatest foe. They are not let out of the coop till they have been hatched two or three days, and they should then be carefully watched and driven in from a shower.

"On the smaller farms they are seldom finished off for market, and middlemen go round about the end of August and buy them up at an average of £4 10s. per score. They are then sold at a small profit, of sometimes only sixpence per head, to the larger farmers to 'shack' upon the barley or oat stubbles, while the 'swine, well ringled,' are put upon the wheat ones. By the terms of some leases, the pigs and poultry are the only live stock which may be depastured on the young grass seeds layer. A turkey-boy is placed in daily attendance on the flock, to drive them home if it is wet, and keep them away from the trees, to which, true to their American forest origin, they are very partial. Nice bright plumage, and wattles like red sealing-wax, are capital symptoms, and if the cocks gobble they are said to 'talk healthy.' Fighting is also a true sign of vigour, and so is fly-catching when they are young. Besides what they get on the stubbles, they have abundance of in-door relief. The system of cramming them at night with forced balls is very much abandoned, and they are generally well kept on potatoes, barley-tailings, and light wheat, ground and mixed with milk. Common white turnips, which they eat greedily without slicing, tend to make their flesh white, and 'cool their coppers;' brick-dust to scour their maw is never neglected.

"They are killed simply by breaking their necks, and the breast-bone is also broken before they are sent off to the poultry salesman, in order to give the breast a plumper appearance. The cocks, if sold out of their feathers to the neighbouring gentry, will fetch one-and-twopence per pound, and the hens a shilling, or sometimes only ninepence, when a very plentiful season has knocked down prices, or they are not fed up to the mark. The bigger they are the higher their value per pound, on the same principle that salmon of twenty pounds and upwards fetch sixpence more in the spring and early summer months for the large West-end dinner parties. The great bulk of them go in their feathers to the London salesmen; but the wives of the small farmers take them picked to Norwich and sell them in the market, where very large ones, trussed and ready for the spit, have made one-and-sixpence at Christmas. Hen-birds, which get fat sooner, and are generally killed off before the end of November, are thought to be a daintier morsel than the 'gobblers.' Some two-year old cocks (beyond which age they are very seldom kept) have been killed at thirty pounds, when a heavy-weight is wanted for an audit dinner; but with very high feeding, in one or two rare instances, prize birds have turned the scale at forty pounds."

The White Turkeys mentioned in the preceding account are exceedingly beautiful in appearance. The tuft on the breast of the cock remains black, producing a most beautiful contrast with the snow-white plumage; and the red and blue upon the head and neck also contribute to set off the general colour of the bird. This variety is generally found somewhat delicate, but not to nearly so great an extent as many persons have alleged; indeed we have heard from one lady

who kept them that she thought them fully as hardy as the black variety. Many of the Cambridge Turkeys are also very beautiful, some we have seen almost rivalling the American Bronze Turkeys in the richness and variety of their tints. We must add, however, that we have never been able to find a single authentic case of an English bird reaching the weight stated of forty pounds, though even this enormous weight has been on many occasions exceeded by the American bronze birds. This last is beyond doubt the largest and most magnificent in plumage of all the domestic breeds; and it has been brought to perfection by our Transatlantic brother-fanciers and breeders. We have much pleasure in giving the following notes upon the American method of breeding and management, which have been kindly furnished us by Mr. W. Simpson, Jun., of West Farms, Westchester County, N.Y., from whom the winners of the first prize at Birmingham in 1870, 1871, and 1872 were imported, and who is acknowledged to be one of the foremost turkey breeders in the United States :—

"This grand breed," he says, "was produced by crossing the best common domesticated turkeys with the wild variety, which by careful breeding has resulted in producing a breed that is much larger and superior to either of its predecessors, having great size, and retaining to a great degree the magnificent plumage of the wild variety. The best strains of Bronze Turkeys usually average about thirty pounds to the cock and sixteen pounds to the hen, but often we get an odd one larger. I have had a few hens reach eighteen, twenty, and twenty-two pounds each, and one hen a few ounces over twenty-four pounds. Up to the year 1870 the largest gobbler I had weighed thirty-eight pounds. This bird I sent over to the Birmingham Show, where he was successful in winning the first prize. In 1872 I had one which weighed forty-five pounds, which I also sent to Birmingham. He lost weight on the voyage, and won second place; the bird I sent in 1870 outweighing him and again winning first. This last bird was the largest I ever heard of, and if he does well, I predict that Mr. Lythall, who now owns him, will ultimately show him to weigh forty-eight pounds, which will be ten pounds heavier than any yet exhibited at the Birmingham Show.

"As to the breeding of turkeys, I consider them nearly as easy to rear as chickens. I keep them on four farms, a gobbler and four or five hens on each. The best age for breeding is two and three years old, for both cock and hen, as such birds produce stronger and larger stock than yearlings do. There is, however, a difficulty here, and I formerly had great trouble during the breeding season, in having the backs of the hens skinned, and the birds sometimes even killed, with the great weight of the old gobblers. I then gave up using old gobblers, and tried young ones, but their stock did not prove nearly so large and good. At last I tried the plan of confining the old gobblers before the breeding season, and *thus reducing them to light weight.* This experiment proved a perfect success, and it will be found much the best course to pursue.

"I generally set the first eggs under common hens, and then let the turkey hatch out a set. A few days before hatching out, I take the hen off her nest, and dust flowers of sulphur through her feathers, and sprinkle plenty of it in the nest. This generally frees her from vermin; if not I repeat it after hatching, and rub some on the chicks. When hatched the mother should be confined in a roomy coop, with a slatted front, open to the south, on a clean piece of short grass. The young should be fed little at a time, and as often as possible. For the first few days hard-boiled eggs are to be preferred. Curd made from sour milk, with young onion-tops cut very fine with a pair of scissors and mixed through it, is excellent for them. This feed should be given out of the reach of the mother, who can be fed on whole grain. When the young are a week old, they can have some cracked corn, or oat and wheat grits; oatmeal with about ten per cent. of pure bone-meal mixed with it is excellent. But as the oatmeal is too costly, we substitute boiled Indian

meal. Do not fail to give *fresh cool water two or three times a day*, and milk is good for an occasional drink.

"When the young are about three weeks old, the old bird may be let out with them every morning after the dew is off the grass, and shut up every evening. They should then have food placed under a frame with slats, so as to keep the old birds from it. When the young get so that they can fly up to roost, their quarters should be changed to the turkey-house. This house can be built to suit the taste of the owner, but a rough board shed, made secure against dogs, foxes, &c., is sufficient. It should be provided with broad perches of easy access from the ground, so as to avoid crooked breasts and other injuries. The old and young should be confined in this house every evening, and well fed night and morning with a variety of food; during the day they will roam over the farm, and devour quantities of grasshoppers and other insects.

"The Turkey does not attain his full weight until his third year. I never weighed a brood of turkeys but once, and that was in February, 1871. They were then just eight months old. Eight gobblers weighed from twenty-three and a half pounds to twenty-nine and a half pounds each, and the eight averaged twenty-five and a half pounds; six hens from thirteen and a half pounds to fifteen pounds each, averaging a little over fourteen pounds. These were remarkably good chicks for their age. They were raised from a fourteen-and-a-half-pound hen and a thirty-two-pound gobbler. Strange as it may appear, it is a fact that I have always succeeded in raising better chicks from hens of fourteen to fifteen pounds than those of heavier weight; but a fine large gobbler is of the greatest importance. As above stated, however, he should have his weight reduced, for the sake of the hens, before breeding."

The description of the Bronze Turkey in detail will be found in the schedule, which we copy from the American "Standard of Excellence," at the end of this chapter, and from which it will be seen how closely it resembles the wild breed. Mr. Lythall has crossed the Bronze with the Cambridge, putting the cock sent to Birmingham in 1870 by Mr. Simpson to his own hens, and showing, in 1871, a young turkey-cock, the produce of the cross, which weighed twenty-eight pounds at six months old, and took first prize in the young class.

Mr. Simpson's notes contain all the essentials of good turkey management; but some further remarks appear advisable, and the more so as there has been on some points a difference of opinion. Thus, we have seen it stated that Mr. Lythall prefers to breed from gobblers not exceeding two years old, and his example has been quoted as if conclusive in favour of this course. It will have been noticed, however, that the cockerel above mentioned, and which is certainly the heaviest yet bred in England, was bred from Mr. Simpson's *old* bird; and as the Americans have hitherto beaten us in weights, this agreement with their theory is pretty nearly conclusive, besides being borne out by the almost unanimous opinion of English breeders. The great objection to using old gobblers lies in their weight; but a way to remedy this has already been pointed out, and removes the difficulty entirely. Mr. William W. Clift, another celebrated American turkey breeder, and formerly editor of the *American Agriculturist*, in an article upon breeding turkeys, in the American *Poultry World*, is equally "strong" upon the necessity of using fine matured males. "In rearing this or any other variety," he says, "almost everything depends upon the parent birds; yet in nothing are farmers more careless. The common practice is to sell off the heaviest birds at Thanksgiving and Christmas, and take the late birds of light weight for breeding. The excuse for this is that the heavy cocks wear the feathers from the hen's back, and the heavy hens are more apt to break the eggs in the nest. Both these notions are old wives' fables, that ought to be banished from the poultry-yard. Another objectionable practice is to breed only from yearling hens. The old birds are very generally sold off because they have four or five more pounds of

flesh upon them. The Turkey does not attain its maturity until the third year, and the largest, strongest chicks can only be secured from mature parents. So common is the practice of selling off everything at a year old or less, that it is almost impossible to get stock two and three years old. In purchasing breeders, it is the best economy to buy the heaviest birds, even at fancy prices. A ten months' cock, weighing thirty pounds, is cheaper at fifty dollars than a twenty-pound bird at five. Young hens weighing sixteen to eighteen pounds are cheaper at twenty dollars than twelve-pound birds at five. Large, well-formed birds, of perfect plumage, will leave their mark upon their progeny."

Another American journal, devoted to farming matters generally, in its issue for February, 1873, puts the matter very simply, forcibly, and practically; and the article is so especially valuable, as giving the results of actual experiment, that we extract nearly the whole. "The real reason of breeding from young birds in most cases," says the writer, "is that the farmer grudges the few extra pounds of poultry that he has to feed through the winter. The difference between a dozen good birds fit for breeding and a dozen of the second litter is some sixty or seventy pounds [in weight], worth twelve dollars or more. If he markets that poultry he is sure of the money. The cost of keeping large birds in good condition is also more—so he tries to believe that the keeping of the refuse of his flock is good policy. This we know to be a very bad practice. . . . Turkeys do not reach their full size until their third year; and we believe we can get larger and stronger birds from full-grown stock than from yearlings. In the year 1871 we bred from a large bronze gobbler, a late summer bird of the previous year, weighing twenty-five pounds, and from yearling hens with few exceptions. The gobbler was from a very large pair, weighing sixty-two pounds, and gave us a fine flock. We kept over the gobbler and most of the hens. He had increased his weight to thirty-one and a half pounds without extra feed, and some of the hens reached eighteen pounds. *The result is a much larger flock of* [*young*] *turkeys*, and they are heavier October 1st than the flock of last year November 1st. This would indicate an average difference of *three pounds or more* by Christmas in favour of breeding from three-year-old birds. Pairs weighing forty pounds at seven months are much more numerous than pairs weighing thirty-five pounds were last year at the same age. The turkeys have had the same care; and the difference of growth seems to be owing simply to the fact that the breeders were of larger size and more mature."

Still more emphatic is the testimony of Mr. Hewitt upon the same subject, and no one has had greater opportunities of knowing the truth in this matter. He writes to us as follows:—

"It should be constantly borne in mind that in no other variety of poultry is excellence of conformation and first-rate condition so all-important as in turkeys. As turkeys, when of unusual weight and well-fed, are always certain to maintain a good price for table purposes, so do malformations of any kind entail naught else but absolute loss on those who raise them. The great cause leading to such vexations, I do not myself doubt for a moment, arises from the 'penny wise and pound foolish' system, of late too general, of selling off all the finest birds at the close of the year to the poulterers, as they then sell for heavy sums, and retaining for brood stock late-hatched poults, themselves immature, and greatly lacking in general constitution.

"My own experience proves that strong, well-grown turkeys, of two or even more years old, are the brood birds most to be depended upon for the realisation of profit, in raising stock for the table or the exhibition-pen. Although I freely admit the temptation is great, when prices are offered, as they frequently are, at approaching festive occasions for the best birds of the flock, the most astute course for an owner is to retain the poults most remarkable for size, constitution, and perfect conformation, as his future breeding stock. It should be known that unusually large turkeys always sell at incomparably higher prices (even as sold by the pound)

than moderate-sized ones. As very finely grown turkeys command almost any price, the object of a breeder is to obtain such parent stock as will ensure the majority of the poults to be thus unexceptionable. Adults must form the brood stock, and every approach to wry-backs, or wry-breasts must be discarded altogether as worthless.

"But there is still another failing in turkeys when dressed for the table far more objectionable than even a wry-breast, viz., the so-called 'short-breasted' bird, thus named by poulterers from the fact that the keel of the breast-bone rarely measures above four inches in length, and sometimes barely as much as that.

"It is a strange coincidence that these 'short-breasted' birds are frequently very heavily laden with fat on the back and thighs, far beyond those daily receiving the same care, and running with them, but are almost unsaleable; and I *know* this malformation is usually hereditary. The 'bosom' is also sometimes greatly developed; but the carver is doomed (however practical) to disappointment, for of flesh on the breast there is scarcely any. This is a far more objectionable feature than even that of a wry-breast, where the meat may abound on the one side, though so deficient on the other.

"One other hint may not be here misplaced. When Turkeys are being dressed for home consumption, the breast-bones are far better left entire, than either 'cut down' or if 'beaten down.' I freely admit such turkeys do not look so well to the inexperienced eye before they have passed the cook's hands; but to a practical carver, the ease and rapidity of supplying fine slices from the breast, without being hindered or encumbered by broken-up pieces of the 'keel' bone, is a great desideratum."

There can be no doubt that it is to the neglect of such reasoning as this, and the continual breeding from small and weakly specimens, that the degeneracy in size and constitution of the Norfolk Turkey is owing; and we owe much to American breeders for showing us what can be done by skill and care in producing birds beautiful to the eye, and even coming up to the requirements of a "fancier," yet surpassing in size our own strains. Something is no doubt owing to the fact that the gobblers are often not allowed to run with the hens, many breeders keeping no gobbler at all, but sending their hens to a neighbour, as it is found that one fecundation fertilises a whole batch of eggs. Of this there is no doubt whatever; but we entertain a strong suspicion that the chicks thus produced are not equal in vigour to those bred on farms where the hens are left in company with the male, and should rather be disposed to recommend the permanent mating of a fine cock with a dozen or fifteen hens. The fact that with a greater number the stock is apt to prove weakly is itself strongly in favour of such a supposition.

Much of the alleged delicacy of young turkeys is also no doubt owing to the degeneracy of the strain; the produce of an American cross being always found much more hardy. It is, however, quite true that during the earlier weeks, and before the young birds "shoot the red," as it is expressively called, or develop the red carunculated protuberances about the neck and throat, they are peculiarly susceptible to wet, so that even one good wetting will perceptibly thin a large brood. After that period is passed, however, they become daily more hardy, so that they will roost in trees during winter, if permitted, without any injury, unless unusually severe frost may cause frost-bitten toes. The period of danger being thus limited, it is well worth while to take special care while it lasts. Special and ample shelter should therefore be provided, and if the hens are at liberty they should be driven under it on the approach of a shower; by which means, if well fed, the dangers of infancy may be warded off. For a period of one to three weeks—depending on the weather—the hen should always be confined, the turkey chicks being, however, allowed to run out on the grass during dry days. Such management, with plenty of good meal as food, will bring

the chicks on with little difficulty. Many farmers feed only on grain after a week or two, but on such diet the young birds never grow large, and rarely show good constitutions.

There is another thing to be remarked. Many careful observers have recorded that, when given the option, turkeys seem to prefer the leaves of the dandelion to any other green food, and it has been found that such leaves, liberally given, conduce greatly to the health and vigour of the broods. The well-known medicinal properties of this plant (employed in medicine under the name of *Taraxacum*) both as a tonic and alterative, make these effects easily understood; and it is therefore well worth while to encourage the growth of the dandelion wherever turkeys are reared. This object, as gardeners well know, is only too easily attained in most places; but even if necessary to scatter a few heads of seed over small patches of ground, it will pay well to do so. In default of the dandelion, lettuce and onions chopped fine form the best substitute. Dryness and cleanliness are however the chief requisites in turkey-rearing so far as prevention of deaths is concerned.

It seldom answers to try and induce turkeys to roost with other fowls. What they require, or rather do best with, is a high perch in some lofty shed or barn, which if entirely open in front is all the better. They should have, in fact, as much liberty and space in all respects as can be afforded.

As a rule the turkey-hen lays about eighteen or twenty eggs; and it is therefore best to give the first six or seven—which is as many as she can cover—to a common hen, when the remainder will probably be about enough for the Turkey herself. The period of incubation is about twenty-eight days; though sometimes the eggs will hatch in twenty-seven, and we have known hatching delayed as long as thirty. The turkey-hen is a model of steadiness as a sitter; indeed, she sits so closely that unless many birds were removed by hand they would stay upon the nest and starve; this should therefore be done daily. The hen is, however, jealous and prudish, and hence none but the regular attendant should be allowed to go near her. The way in which this passionate desire to sit is taken advantage of in France we have described in a previous chapter. We may add that it is particularly desirable to mark turkey eggs set under the natural mother, as she frequently lays several after commencing incubation. She will often attempt to steal her nest, but may almost always be induced to sit in the turkey-house without any difficulty, by shutting her upon the nest the first day, and only allowing her to come off within the house itself for the first time, after that she will usually come back to the nest and eggs provided for her; but should always be watched to see she does not range away too far. It is well to give the nest a good cleaning the day but one before hatching, carefully removing any dung or feathers, besides the application of sulphur advised by Mr. Simpson. The hen should not again be disturbed or lifted off till hatching is completed, but food and water left within her reach.

The hard-boiled egg-diet for the first week is important, turkey chicks having a tendency to diarrhœa, which is thus checked. It is better, indeed, for that space of time to add nothing to the egg but minced dandelion leaves, or if they cannot be had, boiled nettles chopped fine. After that, bread-crumbs, barley-meal, and oatmeal may be gradually added, with occasionally some boiled potato, or small grain; but grain must never form the staple of the diet till older. Curds squeezed dry from the whey may be given in almost any quantity. They are easily prepared by adding a very little alum to warm milk. The weather will, however, cause most anxiety, as both rain and cold biting winds must be carefully guarded against. A very large weather-tight coop for the hen, with the back turned to the wind, and a raised wooden floor covered with dry earth, will do in fine weather; but a spacious shed with a dry floor, open to the south, and a grass plot in front mown short, is much better. When a month old the hen may be allowed her liberty on fine days, and will generally find sufficient shelter herself from any merely passing shower.

Sometimes turkey chicks are very stupid when first hatched, not seeming to know how to peck. The best plan we know of to meet this difficulty is to put a few common hen's eggs under the hen about the seventh day of incubation, so as to hatch out at the same time as the turkey chicks. *These* little youngsters will be sharp enough, and by their example teach the duller turkey chicks how to feed. We may also remark that nearly, if not quite, all kinds of pulse, such as peas, tares, &c., are very injurious to turkeys of any age, and should be kept from their food. This precaution is specially necessary if pigeons are kept, which are so fond of this very kind of diet.

In a state of nature the turkey-cock seeks to destroy the eggs and chickens during the processes of incubation and rearing. Many domestic birds evince the same instinct; which in that case must of course be duly guarded against by shutting up the offender, or at least secluding him from the rearing-ground. Other cocks, however, show a very satisfactory disposition in these respects, and require no such precaution; we have even known cases in which the male appeared to desire a share in the duties of incubation, as is the case in many kinds of birds.

In America and some parts of England the young turkey-cocks are called "toms." It amused us to find, whilst on a visit in Berkshire on one occasion, that the country-folk there called the males of their ordinary poultry by the same term; probably on the same principle according to which the males of the feline race are called "tom-cats," or a particularly obstreperous girl a "tom-*boy*."

Crested turkeys have been mentioned by various ancient naturalists, and for some time were considered to be a distinct species; but all attempts to breed them true to this point having as yet failed, the crests must be considered to be merely accidental sports, though undoubtedly showing the strong relationship or affinity between the turkey and peacock tribes. Various specimens have been found from time to time, and it is somewhat singular that in every case we have found record of the birds have been cocks. These birds have been bred from, but have hitherto failed to produce any crested progeny. The experiment has been tried both by Mr. Simpson in America and by Mr. Tegetmeier in this country, as well as by others; but both gentlemen failed to produce even a trace of a crest. Mr. Tegetmeier, who is well known to take peculiar interest in singular variations, took particular pains, breeding back from the progeny of the crested gobbler to the male parent himself, thus employing three-fourths of crested blood; but the result was as before; and we hear from Mr. Simpson, who also took some pains in the matter, that no success is known to have been obtained by any individual. The crest, therefore, remains as an accidental "sport," and nothing more, as regards all present experience; though Temminck states that Madame Backer had a whole flock of crested turkeys in her aviary at the Hague.

JUDGING TURKEYS.—In the ordinary English judging of turkeys it is impossible to find anything which can be reduced to a Scale of Points. Beauty of plumage and condition are taken into consideration to a moderate extent; but judging depends far more upon *weight* than anything else, the heaviest bird being almost invariably awarded the first prize.

The introduction of the splendid American Bronze breed will not improbably lead to some change in this respect, there being a certain standard of plumage to which these birds are bred in America, and to which, there at least, they are expected to conform. That this is not inconsistent with size and weight is conclusively proved by their having beaten us on our own ground, even at the scales; a fact which goes far to prove what we have elsewhere advanced, that "fancy breeding" is *not* contrary, but conducive, to the production of the finest poultry. The schedule here given is copied from the American "Standard of Excellence," as we cannot for obvious reasons put it into our own form till greater experience in judging shall afford the materials; the scale

as it is, however, bears the marks of careful compilation, and of a general correctness which will be sufficient for all practical purposes, and we trust that its dissemination among English breeders may be the means of making better known this splendid bird, and arousing something of the emulation of the true fancier among English turkey breeders. We only wish to add one criticism sent to us by Mr. W. Simpson, than whom there could hardly be higher authority. "The scale is, I think," he says, "quite correct, except in describing the legs; in respect to these I think nothing should be said about colour. The principal progenitor was the wild bird with its pink legs, and the best birds have legs of various colours. I have some with pink legs, like the wild; others with dark slate-coloured legs, and some spotted pink and black. If they match in a pen I think that should be sufficient." We cordially endorse this view, and with this remark give the American scale as it stands.

SCHEDULE FOR JUDGING AMERICAN BRONZE TURKEYS.

(From the American "Standard of Excellence.")

THE COCK.—*Face, Ear-lobes, Wattles, and Jaws*—Rich red; in adult birds the wattles are carunculated, and sometimes edged with white. *Head*—Long and broad. *Bill*—Curved, strong, and well set in the head, light horn-colour at tip, dark at base. *Neck, Breast, and Back*—Black, beautifully shaded with bronze, which glistens like gold in the sunlight; each feather ending in a narrow glossy black band extending entirely across the feather. *Under Part of Body and Thighs*—Black, similarly marked to the breast, but colours not so decided or rich. *Wing-bow*—Black, with a brilliant greenish or brown lustre. *Wing Primaries*—Black, barred across with white or grey, the more even and regular the better, with a narrow edging of white on the outer web. *Wing Secondaries*—Quills black, outside web grey, narrowly edged with white; inside web dark brown, mossed or shaded with grey; the whole of the flight-feathers may be edged with white, but this is rather objectionable. *Wing-coverts*—Rich beautiful bronze, the feathers terminating in a wide black band; the wing when folded having a broad bronze band across it, divided from the flight-feather by a glossy black ribbon-like mark formed by the ends of the coverts. *Tail*—Black, each feather pencilled irregularly with narrow bands of brown, and ending in a broad greyish-bronze band. *Tail-coverts*—Dull grey, where overlapped, shading into a brilliant metallic blue-black, and ending in a wide brown band, extending entirely across the end of the feather; the black part being crossed by two or more very narrow pencillings of brown, and a distinct narrow pencilling of glossy jet black between the blue and brown ends; the more distinct the colours throughout the whole plumage the better. *Fluff*—Abundant and soft, but well covered by hard body-feathers. *Legs*—Long and strong; colour dark, nearly black.

THE HEN.—The entire plumage similar to the cock, save that the colours are not so bright nor distinct, and the edging of the feathers is more frequently white, or rather pale buff, than black. On the back the edging is very narrow between the wings, and increases in width towards the tail, being about three-eighths of an inch on the coverts. On the breast the body of the feather is brown, ending with a narrow edging of white buff, divided from the brown by a narrow glossy black band.

POINTS IN BRONZE TURKEYS.

Size	35
Richness and Perfectness of Plumage	30
Legs	10
Symmetry	15
Condition	10
	100

DISQUALIFICATIONS.—White in any part of the plumage of the cock, except in the wings; crooked breasts; deformity of any kind; adult cocks weighing less than thirty pounds, and hens less than eighteen pounds.

CHAPTER XXXIV.

THE PEA-FOWL.

If the references to the peacock in the two parallel passages of Scripture, 1 Kings x. 22 and 2 Chron. ix. 21, are correct translations of the Hebrew word *Tūkiyyīm*, the bird has been known from the earliest times; and the decision of this question invests the Pea-fowl with an historical and geographical interest, greater perhaps than can be attached to any other bird, since upon it almost exclusively depends the further question as to the aim and extent of Solomon's voyages, and the locality of that Ophir to which in other places they are said to have been directed. That Ophir is identical with the country from which the various products named in these verses were obtained may almost be assumed, and as every one of these except the *Tūkiyyīm* could have been obtained from either Arabia, Africa, or India, the whole of this interesting question almost entirely depends upon what creature is meant by the Hebrew word. Apart from this all is doubtful, for even the extraordinary supposition (made to account for the length of the three years' voyage) that the fleet went southward from the Red Sea, rounded the Cape of Good Hope, and finally reached Spain, is not so wild as may appear when taken in conjunction with the statement of Herodotus, that the King of Egypt known in Scripture as Pharaoh Necho despatched vessels manned by Phœnicians three centuries later, which performed this very voyage. It is true Herodotus himself discredits this account; but as he does so solely on the ground that these mariners affirmed "they had the sun on their right hand" after having sailed round Libya, which he considered ridiculous "romancing," whereas we now know what the old astronomers were ignorant of, that this was *exactly what would happen* after crossing the Line, his very objection makes the truth of the narrative almost absolutely certain; and it may be argued with much plausibility, that Necho probably directed this voyage from reports of the former successful expeditions by Solomon three hundred years before.

In that case, however, it is most difficult to conceive what can be intended by the *Tūkiyyīm*. The word, it is true, has been supposed by Hebrew scholars to be derived from a foreign root, signifying "tufted," or "crested;" and although the peacock is crested, the crest is far from being so conspicuous a characteristic as the gorgeous plumes. Hence a crested parrot has been conjectured; but it does not appear that the ancients were acquainted with parrots, and much less with any crested parrot, till long after. In fact parrots do not appear to have been known till the time of Alexander, and even then the varieties we find traces of were non-crested birds imported from Ceylon. The pheasant has also been supposed, but the only species of this genus known to the ancients was also without crest; and if we are to go eastward for a crested species, we may much better accept the peacock at once. In fact, supposing an African Ophir at all, the only bird which could possibly satisfy such a derivation of *Tūkiyyīm*, would be one we have never yet seen suggested by any biblical scholar—the Guinea fowl, of which the crest of feathers on some varieties, and the bony casque on others, might be suggested as giving rise to it. This indeed offers, in our opinion, the only tenable alternative supposing the peacock to be rejected; but it is open to the grave and,

we think, fatal objection, that there is nothing in this fowl—singular in many respects as it is—to account for its being mentioned in such a special manner, while its abundance in Abyssinia would make a three years' voyage quite needless to obtain as many specimens as could be desired.

If we consider the Peacock to be really meant, however, all difficulties appear to vanish. There are some other indications which may point to Ophir being in the East Indies; as, for instance, that the natives of Malacca still call their gold mines *ophirs* (De Poivre); but one of the most singular, and more connected with our immediate subject, is that in Malabar the peacock is still called *Togei*, and in one of the Indian dialects, *Tikki*, which may furnish a very probable derivation for the word *Tūkiyyīm*. That such a gorgeous bird as the peacock should be sought for and valued by a magnificent monarch like Solomon, who is also expressly stated to have taken special interest in and had special knowledge of natural history, is highly probable; and it is equally so that a writer who had never seen anything approaching such plumage should deem it worthy of special mention: while we do know that the bird was at a later age eagerly sought, dedicated to Juno, and first bred in captivity in her temple at Samos. If any connection with "crest" or "tuft" be also sought in the name, and the crest of the bird itself be—as we certainly think it is—insufficient to account for it, we may suppose that the splendid tail *carried erect* may be referred to; or even, as it is well known that the plumes were eagerly sought for to be used in head-dresses, that the derivation may be thus explained; for it is to be remembered that the root-word being exotic, the exact signification is now difficult to ascertain. Some Indian region would supply just the distance needed for a three years' voyage in those days; and on all these and other grounds, it is now considered far the most probable that Solomon really was nearly or quite the first to import this beautiful bird from the East, and that some southern region of the Indies—it might be India itself, or Malacca, or perhaps Ceylon—was the locality from which they and the other precious products enumerated were procured.

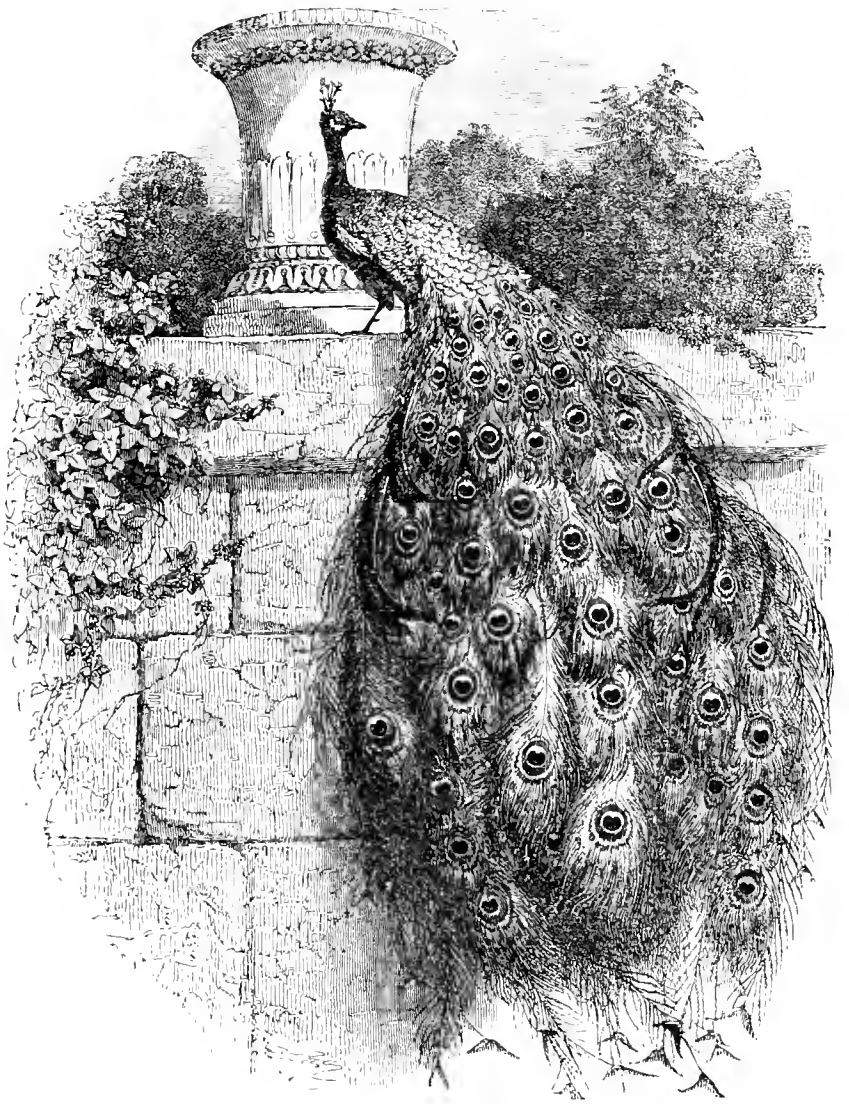
The few lines we have devoted to this curious subject will hardly be considered as wasted, if it be remembered that such conclusions—supposing them to be correct—point to Solomon as *the first importer of fancy poultry*,* and, singularly enough, from the very same region whence the most striking of our own more modern varieties have been obtained. So curious an idea may be smiled at, and perhaps be even classed with the familiar assumption regarding the same monarch being "the first Freemason;" but in this case we have at least a fair amount of solid evidence in favour of such an honour and antiquity for our noble craft.

The Pea-fowl, as will be gathered from the preceeding paragraphs, is found exclusively in Eastern Asia, in which it has, however, a pretty wide range, extending through a great part of China, the whole of India, and the adjacent islands. The crest or aigrette on the head, and the extraordinary appendages which form what is commonly called the "tail" of the male bird, distinguish these birds from allied species. It is hardly necessary now to state, that these "tail" feathers are in reality what in other fowls are called *tail-coverts*, springing from the back, and that under them are the true tail-feathers which, when the gorgeous plumes are erected are also elevated, and form a kind of frame-work or support for them. The peacock has the power of making a curious clattering noise by shaking his plumes together, which he appears to do with the view of attracting the female.

THE COMMON PEA-FOWL, or *Pavo cristatus*, is so well known as scarcely to need description. The head, neck, and breast of the male are a rich purple, with beautiful blue

* We do not overlook the passage in Job xxxix. 13. But the word there is entirely different from that here alluded to, and is considered by most competent scholars to refer to the ostrich.

reflections, the head having an aigrette or crest composed of twenty-four feathers, which are only webbed at the tip, where they show blue and green reflections. The back is green, with a copper-coloured lacing to the feathers; the wings whitish, striped or barred with black, gradually shading into deep blue. The primaries and true tail-feathers are a dark rich chestnut; but the tail-coverts



THE COMMON PEACOCK.

or train are glossy green, ocellated at the tips. The thighs are generally greyish, and the belly and rump black. The eyes are dark hazel, pearled round the edges, and legs brown, spurred as in the common fowl. The neck is very long, slender, and snaky, and the head small in proportion to the body. The peahen is much more subdued in colour, being of a prevailing chestnut brown, variously shaded on different parts of the body, and mottled or shaded in places, especially about the wings and tail, with dull or greyish white. She has a crest like the male, but duller in colour and not so tall.

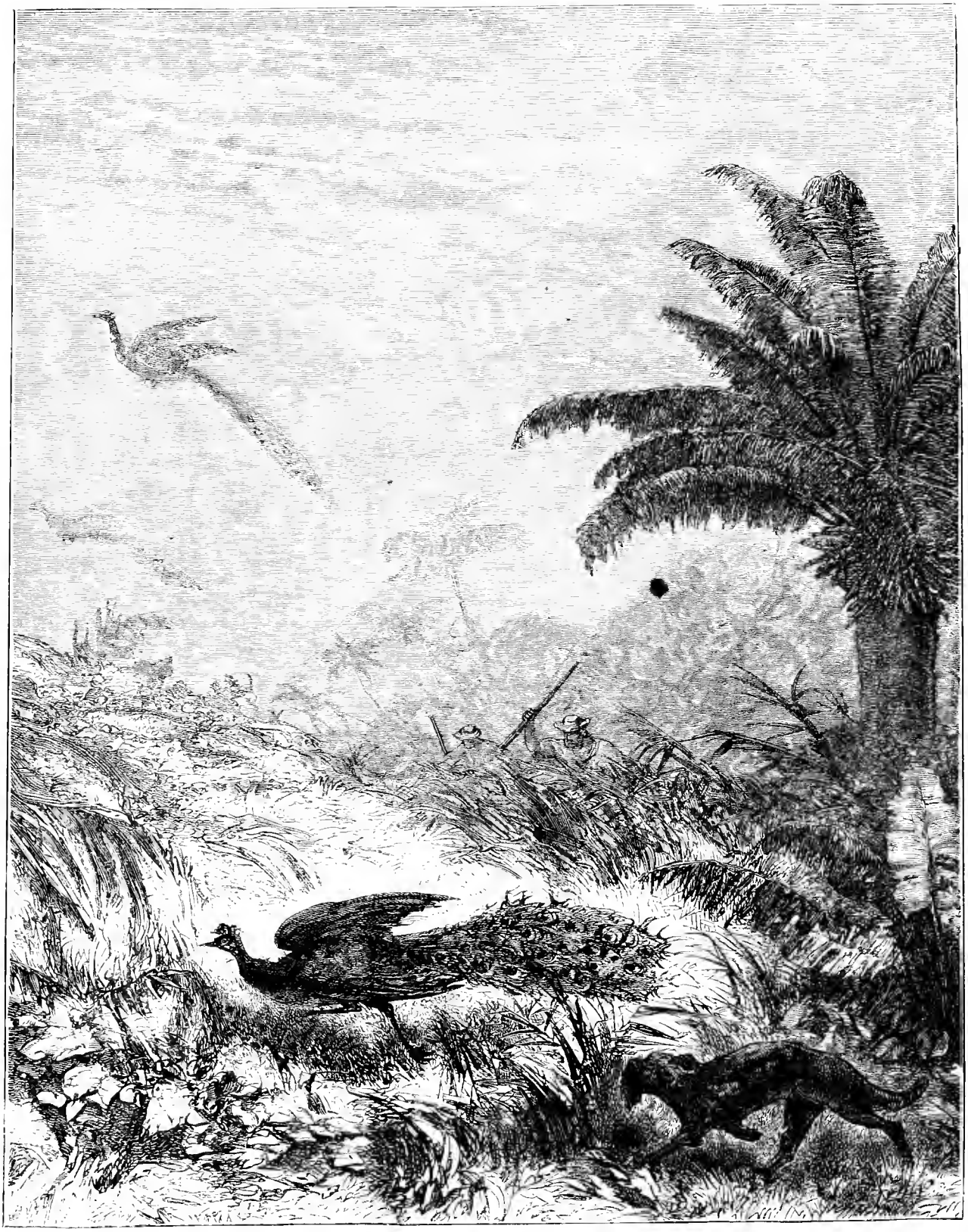
This variety is common throughout India, Ceylon, and the adjacent islands. It particularly

abounds in the thick covert afforded by the woods of the Ghauts, and Colonel Sykes states that large flocks are kept attached to many Hindoo temples in the Deccan. On examining these, and also specimens shot wild, he found them identical with our common domestic bird in every respect.

In some parts of India peacock-shooting is a recognised sport; while in others, and in some parts of Ceylon, the birds are so plentiful as to be cared little about. Thus Sir Emerson Tennant writes that, "in Ceylon, as we emerge from the deep shade and approach the park-like openings on the verge of the low country, numbers of pea-fowl are to be found, either feeding on the seeds and fallen nuts among the long grass, or sunning themselves on the branches of the surrounding trees. Nothing to be met with in English demesnes can give an adequate idea of the size and magnificence of this matchless bird when seen in its native solitudes. Here he generally selects some projecting branch, from which his plumage may hang free of the foliage; and if there be a dead and leafless bough he is certain to choose it for his resting-place, whence he droops his wings and spreads his gorgeous train in the morning sun to drive off the damps and dews of night. In some of the unfrequented portions of the eastern province, to which Europeans rarely resort, and where the pea-fowl are unmolested by the natives, their number is so extraordinary that, regarded as game, it ceases to be sport to destroy them; and their cries at early dawn are so tumultuous and incessant as to banish sleep and amount to an actual inconvenience." Colonel Williamson has described peacock-shooting in India itself in somewhat similar terms. "About the passes in the Jungleterry districts," he writes, "I have seen such quantities of pea-fowl as have absolutely surprised me. Whole woods were covered with their beautiful plumage, to which a rising sun imparted additional brilliancy. The small patches of plain among the long grass, most of them cultivated, and with mustard then in bloom, which induced the birds to feed, added beauty to the scene; and I speak within bounds when I assert that there could not be less than twelve or fifteen hundred pea-fowl of various sizes within sight of the spot where I stood for nearly an hour." He says it is easy enough to get a shot in the jungle, but when the birds flocked together to the number of forty or fifty it was more difficult, as they run very fast, and prefer this method of escape to taking wing. He doubts, in fact, if a slow dog could raise them at all. He says they fly heavily, and generally give an easy shot when once raised; but if only winged will speedily recover themselves, and in nine cases out of ten escape on foot, owing to their swiftness. He also mentions the curious fact that wherever peacocks abound the tiger is generally found also more near than convenient, so that peacock-shooting is by no means devoid of danger.

THE JAPANESE PEACOCK, called also *Pavo muticus* (from its having been erroneously supposed by Aldrovandus to be destitute of spurs), differs considerably in colour and some other points from the ordinary bird. The crest on the head is nearly twice as long, and the feathers of which it is composed are also webbed or barbed from their bases, instead of only at the tips. The colour of the neck is a glossy green, margined or laced with coppery gold, and arranged not as ordinary neck-feathers in most birds, but like the scales of a fish. The metallic gloss is extraordinary, and far superior to that on the other variety. On the back, which is a rich copper-bronze marked with bars of green and light brown, this lustre is still more conspicuous. The shoulder-coverts resemble those of the common bird, but show a deeper and more intense blue; the tail-coverts or train are rich green, barred across, or shot with gold and copper-bronze reflections. In the breeding season, which commences about March, these barred feathers are replaced by other ocellated plumes, resembling those of the Common Peacock, but with more bronze in the metallic lustre. The hen is sober in colour, much resembling the preceding variety.

This variety of peacock inhabits Burmah, Siam, Java, Sumatra, &c.; but is believed not to



PEACOCK-SHOOTING IN INDIA.

be found in India. It is also probably a native of Japan, since the figures of it given by Aldrovandus were taken from drawings sent to the Pope by the Japanese emperor. In general habits it resembles the Indian bird, but is considerably wilder, and is only found a few together. This last fact would tend to show some difference in habits; but the two kinds breed freely, and the progeny is believed to be fertile.

THE BLACK-WINGED PEACOCK, or *Pavo nigripennis*, is a third variety described by Dr. Sclater,* and believed by him to be a distinct species, chiefly on the ground that they propagate true to "points." It differs from the Common Peacock most plainly in the dark colour of the wings, from which it takes its name, but the thighs are also of the same dark tint; the hens, on the contrary, are paler in colour. Mr. Darwin has, however, shown almost conclusively that this coloured Peacock is merely a "sport" from the Common, which, as is sometimes though rarely the case, breeds perfectly true. It has been proved that the *Pavo nigripennis* appeared suddenly among Lord Brownlow's stock; also in Sir J. Trevelyan's; and again in Mr. Thornton's; while in the last two cases it extinguished or took the place of the previously-existing breed. Mr. Hudson Gurney also informed Mr. Darwin that he reared a pair of black-shouldered birds from the common kind; and Professor Newton reared a female in the same way. Stronger evidence there could hardly be.

We find various historical notices of the Peacock, as might be expected of such a conspicuous bird. Its dedication to Juno we have already alluded to. A favourite dish of Vitellius was partly composed of the brains of peacocks; and Columella gives full directions for their management, which are surprisingly judicious for so old a writer. In 1254 Henry III. offered a Peacock as a prize for "running at the quintain." From a very early period the whole bird was considered a dainty dish, and a "pecok enhakyll" (meaning with the train-feathers, showing probably some connection with our modern word "hackle") is named by Fabian as one of the dishes at the wedding-feast of Henry VI. From a curious old MS. in the Library of the Royal Society, we learn the recipe for this noble dish, as follows:—"For a feste royal, pecokkes schol be dight on this manere: Take and flee off the skynne, with the fedures, tayle, and the neck and head thereon. Then take the skynne and all the fedures, and lay it on a tabel abrode, and straw thereon grounden comyn. Then take the pecok and roste hym, and endore him with rawe yolkes of eggs; and when he is rosted take hym off and let hym cole a whyle, and take and sowe hym in his skynne, and gild his combe, and so serve him forthe with the last cours." According to the old play by Massinger, called "The City Madam," "The carcases of three fat wethers were bruised for gravy to make sauce for a single peacock;" but probably "this is sorter ironikle," though it is plain enough that the royal bird was the principal dish of the course. Chivalry, too, paid honour to him; the knight, before sallying forth on his adventures, making his vow before the peacock and the ladies.

And after all there is small wonder in this; for there is no more magnificent sight in nature than a peacock spreading his plumage in the sun before his gratified females, or even before the spectator—for he is a vain fellow, and glad to show himself off to *any* beholder in fine weather. He sets off a country mansion well; and though he is *now* sometimes affirmed to be dry and leathery eating, that is a delusion more conducive to his longevity than true. He must have started the idea himself, in fact, for his own private and particular reasons; for while an old bird, like any

* "Proceedings of the Zoological Society," April 24th, 1850.

other old bird—we came across an old grouse the other day which we had to abandon in despair—is tough enough, a young one is as delicious eating as can possibly be. There need never be any question, therefore, about disposing of surplus stock, should there be any.

Pea-fowl are, however, tiresome in some respects. The scream of the cock, if near the house, is most disagreeable; and the bird is also most quarrelsome with other poultry as a general rule, even *eating* young chicks occasionally. Some birds are so vicious as to attack children or aged persons; but these are rather the exceptions, and most become very tame as regards mankind, coming to the window to be fed, and making a persistent row till their wants are supplied. They are also so wild in disposition that it is very difficult to breed them in yards, though cases have been known in which the hen has laid and hatched in confinement. As a rule, however, the adult birds roost in trees, or, failing them, on the very ridge of some house or barn, to which they fly with the greatest ease. The latter is, however, very bad for their feet in frosty or snowy weather, and trees are much better.

Little can be said about their management, for similar reasons; they must be left in great degree to manage themselves. One cock should not be allowed more than four or five hens, and they should be regularly fed. The hens lay their eggs in the most secluded place they can find—somewhere deep in a copse or shrubbery in general, though some will take to the long grass in an open field—and must on *no account* be disturbed. They are so impatient of their privacy being invaded, that such an event is nearly always followed by "soft eggs," or, if sitting at the time, with failure; but if left to themselves, they will almost always bring off regular and good broods. The time of incubation is twenty-eight days. When hatched, the chicks should be treated very much as young turkeys, but giving them more animal food, such as ants' eggs or worms. They are not, however, so delicate as turkeys, and in fine weather they should be let out always, but only on short grass. After a fortnight they need very little care indeed.

The peahen goes with her chicks about six months, or even till next spring, and is a very fond mother. The young appear to need this extended protection, and hence it is almost useless to attempt to hatch the eggs under common hens, which discard their broods at two months, unless "artificial mothers" are provided to nourish them afterwards. Till they moult, at eighteen months old, the cocks remain the same colour as the hens, and do not get their plumes in full beauty till their third year. Both sexes moult very fast, and appear to suffer much during the process, always seeking the deepest seclusion at such times. It is, however, rapidly over if all goes well, though the new train-feathers seem to remain very short for some little time, when they appear to take a fresh start, and rapidly assume their former length.

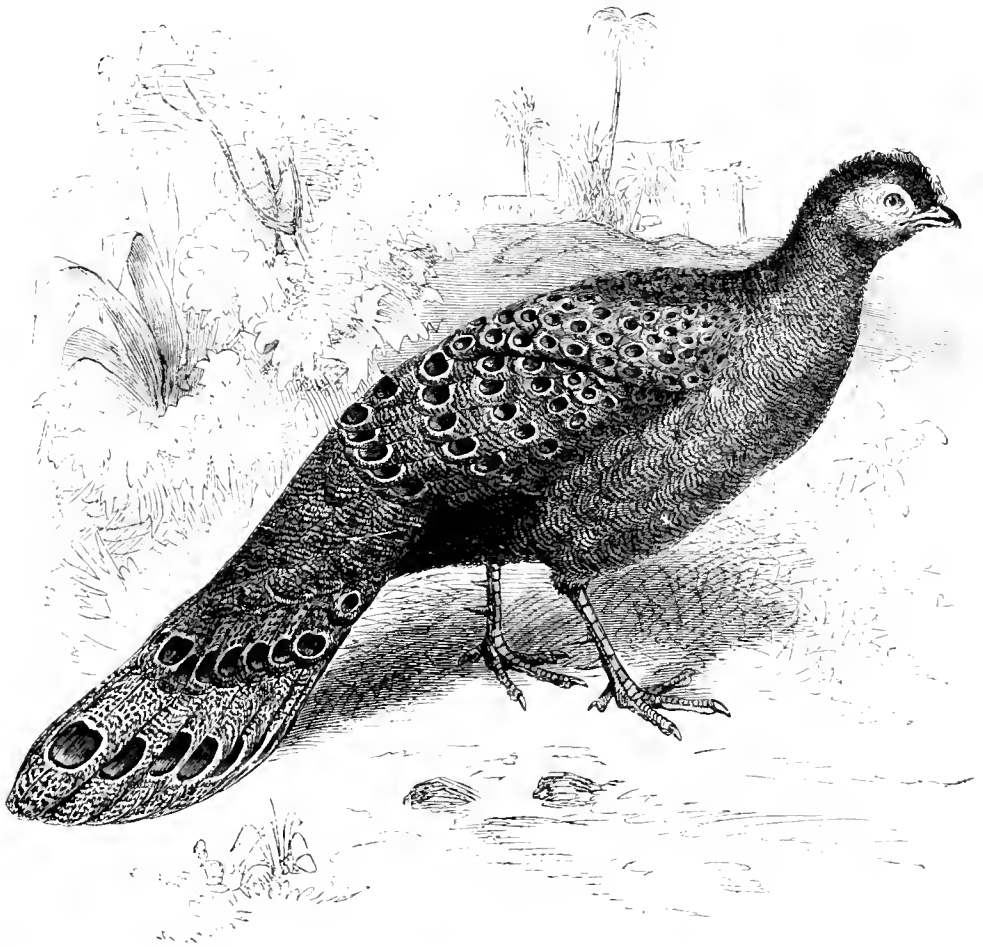
White and pied varieties of the Common Pea-fowl are frequently seen, but are, in our opinion, far inferior in beauty to the natural colours. The white are, however, more delicate than the common kind.

Pea-fowl are very rarely seen at exhibitions, and when they are can only be judged by the general effect to the eye, size also being allowed due weight.

THE PEACOCK PHEASANTS.—The group of birds (*Polyplectron*) known by this name are classed by nearly all naturalists between the peacocks and the pheasants; but their exact position is not easy to define. On the whole, however, they would appear to possess most affinity with the peacock family; and as they appear quite capable of domestication, at least in the aviary, while their exceeding beauty renders such a result much to be desired, they may legitimately find a small space in this chapter.

The group is usually considered to include four species; but the most typical, and to most

eyes perhaps the most beautiful, is the Assam bird (*P. Chinquis*). This beautiful bird in so many respects resembles the *Pavonidæ* that it is called by Linnæus the Thibet Peacock, though it is doubtful if he was not mistaken as to this particular species being found in that locality at all. It is wild and shy, being rarely met with by sportsmen, but retiring rapidly at the approach of man. The general appearance is remarkably well rendered in the illustration, as may be seen by comparing it with the specimens now in the Zoological Society's Gardens at Regent's Park. The body of the cock is slender, the wings being however very broad and short in proportion, and much rounded at the extremity. The eye is yellow; the head greyish brown, finely pencilled over with black; the



ASSAM PEACOCK PHEASANT (*Polyplectron Chinquis*).

neck and breast brown, also beautifully pencilled over with black, and spotted with yellow; the shoulder and wing-coverts are a dirty yellowish ground, marked over with the prevailing black lines or pencilling, but each feather having also a beautiful ocellus or eye like those in the tail of the peacock, but smaller; these eyes are green in the centre, with a purple border. The feathers of the back and the large tail-coverts, which spring out over the true tail as in the peacock, are generally palish brown, each feather having a similar green and purple eye; but in the tail these eyes are also surrounded by a rim or circle of glossy black. The legs are black or greyish black, and seem never to have less than two spurs, and often more, as many as five having been noticed on some specimens. The hen is less striking in plumage and has not so long a tail.

Although so shy when at liberty, this beautiful bird, as we have said, is capable of domestication. A distinguished writer in *The Field* under the *nom de plume* of "Ornithognomon," treating on the game birds of India, observes that he had kept them in captivity, which they bore tolerably well, but never became thoroughly tame; but in the Zoological Society's Gardens, under the care of Mr. Bartlett, domestication has been attended with better success. The first specimens were received in 1857, but both these were males. In 1864 a female was procured, which bred several times; and it was clearly ascertained, according to Dr. Sclater, that two or three broods in a year are produced, that the number of eggs is two, and that they are about two inches long. It was also found that the young are covered by the long tail of the mother. The first eggs were hatched under a Bantam hen, and the young always kept close *behind* her, never coming to the front, and being consequently often kicked over. This was not understood until one or two chicks were reared by the natural mother, when it was seen that she kept her ample tail widely spread, so as to completely cover and protect them, and keeping them quite out of sight, except when she called them for food, which they would quickly pick up, and then run back to their shelter.

We have reason to doubt if two eggs only will be found to be the regular number laid by the *Polyplectron*. We have seen already that many wild birds lay much less than the usual number when first domesticated, and probably further experience will give better results, especially if more space can be afforded. By slow degrees, as in the case of the wild turkey, the bird would probably become accustomed to closer confinement. Its exceeding beauty makes the experiment at least worth a systematic trial.

WILD DUCKS (*Anas boschas*).

CHAPTER XXXV.

DUCKS.

WE believe all naturalists are agreed that the whole of what may be called the "farm" breeds of ducks, if not many of the others also, are descended from the Wild Duck or Mallard (*Anas boschas*), which is distributed more widely than perhaps any other bird over the entire continent of Europe and great part of North America. Indeed, its range may be stated to extend from the vicinity of the pole in summer to almost the torrid zone in winter, migrating regularly towards the south on the approach of cold weather, and returning with the summer to the more northern regions. In the more southerly countries it is, however, a less frequent visitor, the temperate latitudes being its favourite home; but it has been known even to reach North Africa during its winter migrations. Italy, Greece, and Spain are its most favourite winter quarters.

The colour of the Wild Duck nearly resembles that of the Rouen, to which we may therefore refer for more detailed description, so far as this point is concerned. The shape is, however, more slender and upright, and the habits much more active, as shown in the very excellent representation on the preceding page, which also most clearly shows the close resemblance in other points, as may be seen by comparing it with the coloured plate of Rouens. But a singular change in the plumage of the drake must be here noticed, and which is common also to the Rouen, and to most other varieties of ducks in which the plumage of the male is greatly superior in beauty to that of the female. It is thus described by Waterton:—

"About the 24th of May the breast and back of the drake exhibit the first appearance of a change of colour. In a few days after this the curled feathers above the tail drop out, and grey feathers begin to appear amongst the lovely green plumage which surrounds the eyes. Every succeeding day now begins marks of rapid change. By the 23rd of June scarcely one green feather is to be seen on the head and neck of the bird. By the 6th of July every feather of the former brilliant plumage has disappeared, and the male has received a garb like that of the female, though of a somewhat darker tint. In the early part of August this new plumage begins to drop off gradually, and by the 10th of October the drake will appear again in all his rich magnificence of dress, than which scarcely anything throughout the whole wide field of nature can be seen more lovely, or better arranged to charm the eye of man." The dates here given are, of course, subject to some little variation, as Waterton observes, but much less so than many would suppose.

Marshes and fens, as is well known, are the chief resorts of the Wild Duck; and drainage and other forms of cultivation have now driven it away from many an old favourite haunt where it formerly was a regular and welcome visitant. To others, however, it still comes in large numbers, and is taken by various species of decoys, or shot by hundreds, especially in Lincolnshire. About March it pairs, the wild bird being strictly monogamous, and soon after begins to breed; the duck usually laying from seven to ten eggs, and making her nest of flags or sedges somewhere near the water—if there be a small island it is eagerly taken advantage of. As soon as the duck begins to sit, Waterton says, the drake leaves her, and joining the others, begins the curious moult which we

have already described. Later on, when the young are partly grown, the male rejoins his family, and several often unite to form one flock. They then remain together till the autumn, when the whole colony fly in consort to their warmer winter quarters. During this migration they generally fly in long lines in the shape of the letter V, the "dressing" being nearly as accurate as in a regiment of soldiers; but the formation is frequently broken up, when the birds get into a confused mass. It will be seen that this mode of flying is more or less common to all the water-fowl.

The duck sits for twenty-eight days, except some of the smaller varieties, which hatch in less. She usually sits with the greatest steadiness, and on leaving the nest always covers her eggs very carefully with leaves or other substances. Whether this is done for concealment or to protect them from the cold is somewhat uncertain.

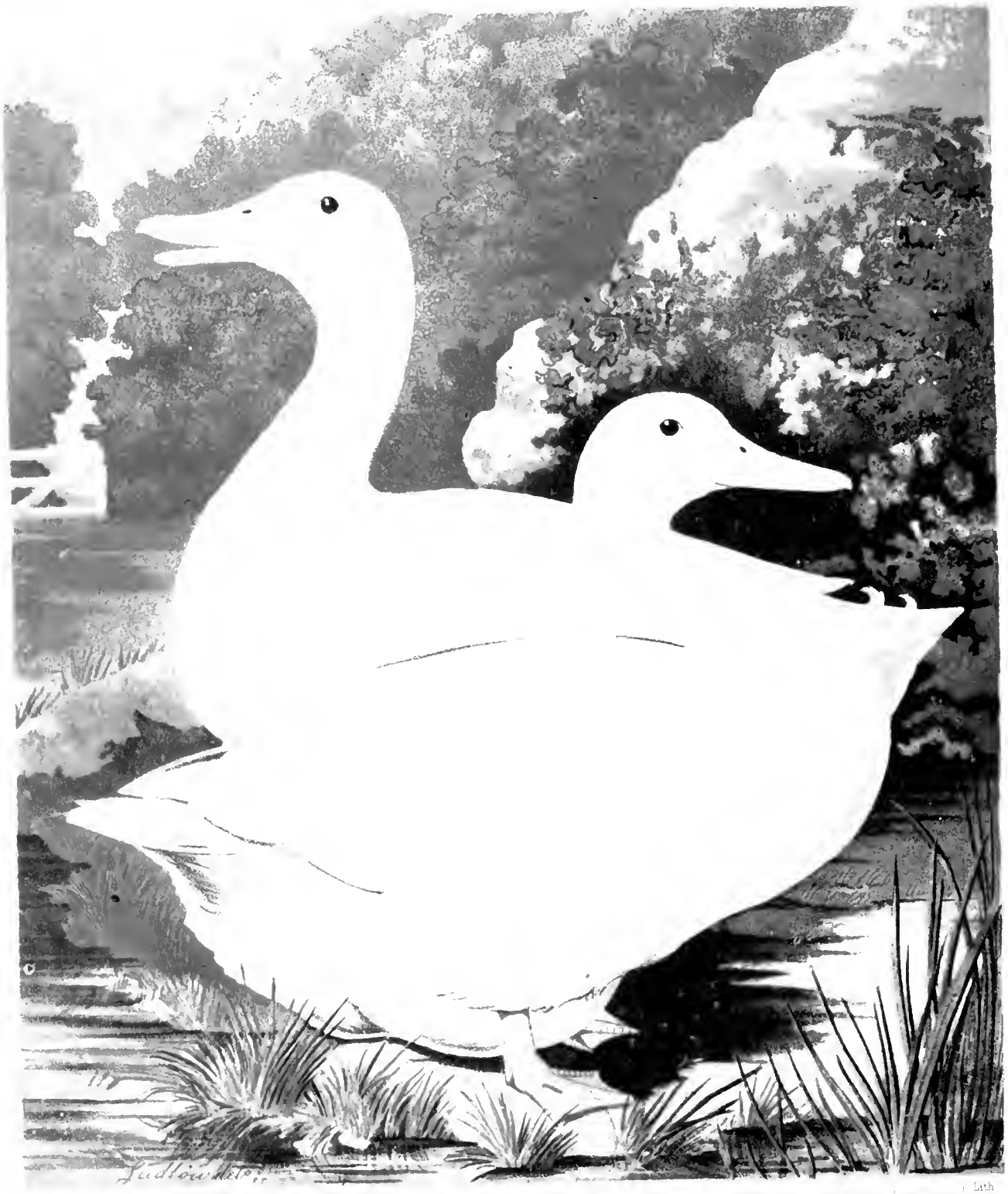
Wild Ducks have often been domesticated. The usual mode is to obtain eggs and hatch them under tame ducks or hens, when they are brought up with no difficulty, though of course there is some wildness of disposition. It is also generally found that, down to even the third or fourth generation, such domesticated wild drakes pair strictly like their ancestors, instead of taking a small harem like the domestic variety. When thus domesticated, the progeny after a while almost always begins to vary in colour.

With this brief description of the parent race, we may proceed to treat of the varieties known to the farmer or the fancier. These two words, in fact, class the domestic races into two natural though rather rough divisions, and we shall take them in that order; discussing first the larger varieties which are chiefly valued for economic purposes, and then proceeding to the small and elegant forms—some of them of surpassing beauty—which delight the fancier who can gratify himself with their possession.

AYLESBURY DUCKS.—On this breed we cannot do better than give at once the notes with which we have been kindly furnished by Mr. J. K. Fowler, Prebendal Farms, Aylesbury, whose fame as an exhibitor is well known, and Mrs. Seamons, of Hartwell, Aylesbury, who shared the honours with him until her retirement a short time ago; it would, indeed, be scarcely too much to say that while both exhibited, at least nine-tenths of the prizes for both ducks and geese came to their hands. Mr. Fowler writes as follows:—

"The county town of Buckinghamshire has given its name to the famous breed called Aylesbury Ducks which there originated, and which has been peculiar to the neighbourhood longer than the 'oldest inhabitant' can recollect. They are now world-renowned, and may be seen in all parts of Great Britain, our colonies, in most countries of the European continent, and are also now becoming denizens of every poultry-yard in the United States and Canada. They are certainly the most easily acclimatised of all the water-fowls, and thrive where other breeds fail. The great merits of the Aylesburys are their hardiness, great size, and, above all, their early development to maturity.

"They are reared annually in enormous quantities in and around the town of Aylesbury, and it is not uncommon to see a ton weight of ducklings of six to eight weeks old sent in one evening to London by rail from the town and neighbouring villages. The trade for them commences in February and lasts till about the end of July, and during all that time it is difficult to keep up the supplies to meet the great demand. The birds are generally killed at six weeks old, at which time they weigh about three pounds each; and they realise prices ranging from nine shillings to twenty-one shillings a couple as the season advances. After Ascot summer meeting it is always noticed that the prices rapidly fall. The bulk of the rearing is done by cottagers, who make a good living by the process, and many save considerable sums of money. It will surprise many,



Mrs MARY SEAMONS' PAIR OF

AYLESBURY DUCKS,

CUP AT AYLESBURY, 1870, & MANY OTHER CUPS & PRIZES.

perhaps, to hear that upwards of £20,000 a year is returned to this immediate neighbourhood for Aylesbury Ducks alone.

"It is a curious sight to see the cottages of the 'duckers,' as the breeders of them are called, during the spring, when they have the youngsters in every room of their house, from the kitchen to the bedroom; and their clamour when feeding-time approaches is terrible. The birds intended for market purposes are never allowed to go into water, and often are not even permitted to go out of the purlieus of the dwelling-house till they are killed. Their food is at first eggs, boiled hard and chopped fine, mixed well with boiled rice, and this is given to them several times during the day. As they grow, and are capable of consuming more, they are fed upon barley-meal and tallow greaves, mixed together with the water in which the greaves are boiled.

"This is all that is necessary for ducklings for early killing and table purposes; but it must not be supposed that such measures are used to bring the birds to the perfection in which they must be exhibited to command success. To produce birds of great size of frame and weight it is necessary to let them go to the water at about three weeks old, for a short space only at first; and though their food is the same at the earliest stage as before described, it should afterwards be varied by giving them maize once in the day, or barley now and then for a change. The greatest difficulty is found in keeping their bills of the proper colour, which should be '*as pink as a lady's nail.*' There is no difficulty in doing this in the vicinity of Aylesbury, as the soil by the side of the streams and ponds is a formation of sandy gravel, conglomerated with minute shells; and it is owing to this, amongst other causes, that their bills are of the much-admired colour. Away from Aylesbury they will often turn yellow, which is objectionable; but this can be remedied if proper care is taken, by putting some gravel into their water-troughs, and keeping them from the sun, which will often tan them, and from running much in the grass, and from foul water, which is also prejudicial to the delicate colour.

"Of their appearance it is almost unnecessary to speak, as there is but one variety, and they are universally known as the 'White Aylesburys,' their plumage being of a spotless white, the slightest discoloured feather being a disqualification, and also showing impurity of breed. Their legs should be bright orange. Drake and duck vary only in the ordinary respect of the male bird showing a very handsome curled feather in the tail, and being of larger size than his mate. Ordinary ducks of the breed weigh about six pounds and drakes seven pounds at twelve months old, and any increase to these weights is above the average; they can, however, be found for exhibition to weigh nine pounds to ten pounds each, the duck and drake respectively; but these are quite outside weights, the heaviest pair ever exhibited at Birmingham, shown by me, weighing nearly twenty pounds the pair.

"It is advisable to keep for a breeding flock one drake to two ducks, or two drakes to five ducks. A running stream is preferable to a pond, but one or the other is indispensable. For beginners, let it be added, the best time to purchase a stock to commence with is in the autumn, say in September, and the birds should be the early young of the year—that is, about seven months old—and the ducks will then probably commence laying in December, and certainly at the turn of the year. By these means an early flock can again be produced. It is advisable to use a drake unrelated to the ducks, and not over two years old, and a change of blood is advisable about every third year.

"Their eggs vary in colour in an unaccountable manner, some being quite white and others a bright green or cream-colour, though the same food and treatment is given to the ducks. The sex of the progeny has nothing to do with the colour of the eggs."

Mrs. Seamons' notes on the rearing of ducks for the London market in the Vale of Aylesbury, and also for exhibition, are as follows:—

"It is tolerably well known that a most extensive trade is carried on in this neighbourhood in young ducks for the London market; all the surrounding villages send their quota of young birds to the railway-stations about twice a week, and on these 'extra' days sometimes several tons' weight will go up to town in a single night, and the demand is still increasing. The large duck-breeders commence collecting eggs from the neighbourhood about Michaelmas. They generally contract to take them for the whole season, by which they get them for much less money, generally about two shillings a sitting, until June, when collection ceases. These eggs are set under hens, and one person will have a hundred and fifty hens sitting at one time. Most fanciers have to wait several days; but these people, by long experience, can tell after a few hours, by holding them up to the light, how many eggs will prove good, and the useless ones are taken away and fresh supplied, in time to hatch out with the rest. The hens are taken off to feed once a day, and if any eggs are broken they are taken away at once, and the remaining eggs and nest perfectly cleaned. Every care is taken in this way. The hens are contracted for by the season, the same as the eggs are; about three shillings and sixpence each being generally about the price. They are set every week as fast as they can be procured.

"When the ducklings are hatched several broods are put together, one hen taking charge of fifty ducklings or more, as they do not want brooding like chickens. They are fed regularly three times a day, the very first food being hard-boiled eggs, rice, and bread; afterwards with greaves and barley-meal [see Mr. Fowler's description of the way this food is prepared], grains, and toppings. They require keeping very clean, and fresh straw every day, and have to be kept from draughts, as they are subject to cramp. Some let them go into the water once a day for a short time, and others not; I think they do best with the indulgence. They have a little water-stand by them with some grit in it. Many think that this grit found in the Vale is different to any other—they certainly are very fond of it, and, without doubt, it is very beneficial in assisting to digest the food.

"About eight weeks old they are quite ready for the market, and are killed weekly at that age. The weight is considered very good if they reach four pounds at that time, and the cost of feeding to this age is about two shillings each. March is the dearest time in the London market, and they will then make seventeen to nineteen shillings a couple. Of course the seasons differ a little, but they always sell very high for a few weeks, and then begin gradually to decline in price until June, when they are not much more than five or six shillings a couple, and the season is considered over. Indeed they do not succeed later, the hot weather producing giddiness when kept so many together, so that they do not remunerate for the trouble and expense of rearing after that time.

"They are generally hatched for exhibition about March and April, and such are treated in a more hardy manner than the market birds. They have access to water more freely, and great pains are taken to keep them from the sun, which tans both their bills and plumage. The peculiar grit found in the Vale greatly helps to keep their bills clean, and also to give health and vigour to their frames. The softer and clearer the water is the better. The young birds require good and regular feeding three times a day, and should be let out in the water for two hours every morning before the sun gets any power. While they are away, clean out the houses, and give plenty of fresh straw—they will then keep beautifully clean and white. The best food I always found, to produce *weight* without producing *fat*, is good barley-meal, mixed with boiled greaves, quite stiff, and *plenty* of green food, such as lettuce, cabbage, or any other garden produce that can be spared. They are very fond of green food, and it is very cooling in the hot weather. I will only add that exhibition birds require keeping quiet, and plenty of room, when they feed better. My own houses

are from twenty to thirty feet high, and well ventilated. The weight of the drake is considered good at nine pounds and the duck at eight pounds, but these weights are rather exceptional, and many persons consider seven pounds a fair average. I once exhibited a pen of three birds that weighed thirty-two pounds when they left home, and even when judged at Birmingham, where they won the cup (extra prize), still weighed thirty pounds. These were the heaviest pen I ever had."

In America yellow bills are considered permissible for Aylesbury Ducks, though in England tantamount to disqualification. There is a reason for this in the great power of the summer sun on the birds if let out in the United States, while the heat is too great to keep them in. Under these circumstances it is almost impossible to keep the bills pale, unless under exceptionally advantageous conditions, such as having the run of a thick wood; the rule is, therefore, relaxed almost of necessity.

THE ROUEN DUCK, as we have already stated, almost exactly resembles the Wild Duck, or Mallard, in its plumage, but has by domestication lost the light and graceful shape of its ancestor, in exchange for a thicker and heavier build and greater aptitude to fatten. For a long time this variety was always inferior to the Aylesbury in weight at Birmingham Show—that great test of relative claims—but years ago they began again* to approach the old champion breed, then equalled it, and finally a few years since passed it; since which Rouens have weighed heaviest on every occasion we can remember. For farmers, and perhaps in the average of circumstances, we believe the Rouen is the most profitable breed; though owing to its later periods of breeding and of maturity it is not so well adapted for the peculiar London trade previously described.

For our notes on this breed we must again express our obligations to Mr. J. K. Fowler.

"The Rouen Duck, which is only second to the Aylesbury as a celebrity amongst our domesticated water-fowl, most probably, as its name suggests, came originally from the city of Rouen, in Normandy; though some ingenious persons have tried to show that the name should be 'roan,' and think that it was so called on account of its colour; though why that particular colour should be pitched upon from the many various ones its plumage contains it is hard to guess. It is far more probable that it is correctly called 'Rouen,' and that 'roan' is a corruption; for we know what quantities of poultry are raised in France, and Normandy is the most celebrated of the French provinces in this respect. We have, however, no proof that the breed of ducks in question are especially the product of Rouen, though you may always see a large number of them, or, at any rate, birds closely resembling them, for sale in the market-place of that glorious old city.

"They are not less hardy than the Aylesburys, but do not come to maturity quite so early. Their flesh is very delicate, and they can be made to fatten to quite as great a weight as the Aylesburys. In appearance they should resemble as closely as possible the common Mallard, or Wild Duck; but the breast of the drake must now be of a deeper claret-brown colour. The following points in respect of colour must be attended to for exhibition purposes: the drake should have a clear bill of yellow, with a slight greenish tinge; a *bright* yellow is objectionable, and, on the other hand, a leaden colour is a fatal defect. The shape of the bill should be as

* We say "began again," because Mr. Hewitt writes us that many years ago he beat all other ducks in weight with Rouens. "At several of the earliest Birmingham Shows," he says, "I exhibited Rouens that not only won in their own class, but outweighed all other ducks. Emulous to see what weight I could attain, I purposely fed up with milk and Scotch oatmeal, and exhibited a pen of two ducks and a drake at thirty-two and a quarter pounds, being about five and a half pounds heavier than the same ducks were the preceding year. This overfeeding caused them, even when reduced to breeding condition, to ever afterwards lay shell-less eggs, and from that time not a duckling was raised from them—a tolerable caution against excessive feeding."

shown in the Plate (and the same description will also apply to the Aylesburys), coming straight down from the skull like that of the woodcock, and being both long and broad. The head is rich green, glossed with purple, which extends down the neck, round which is a collar, ring, or necklace of pure white; this must not *quite* encircle the neck, not quite meeting at the back, but must be clear and distinct so far as it goes. The breast is a rich deep claret-brown, extending down well below the water-line, and as free as possible from rings, or what is called by breeders 'chain armour.' There it passes into the delicate French grey of the under parts, which should extend to under the tail, any pure white under the tail being a great objection. The back is a rich greenish black, the curls in the tail being a dark green. The wings are a greyish brown, with a 'ribbon-mark' across them, which must be a very bright and distinct blue, edged on both sides with white. The flights are grey and brown, white in a flight-feather being highly objectionable. The legs are a rich orange. The whole appearance of the drake should be noble and commanding, and nothing can exceed the beauty of a moderately perfect bird.

"The bill of the duck is not quite so long as in the drake, and is of an orange-colour, with a splash of a dark colour, nearly black, upon it, say two-thirds down from the head, but not reaching the tip or sides; this colour, however, changes during the laying season to a dirty brown, and sometimes they become almost black all over. The head is brown, with two distinct shaded lines on each side, running from the eye down to the darker part of the neck—this is very essential to perfection. The breast is brown, pencilled over with dark brown; the back pencilled with very dark brown, almost black, upon a brown ground. This pencilling must be very distinct. Judges differ somewhat as to the shade of brown which should form the ground-work, some preferring a light clay-brown; but the most 'fashionable' tint is a dark brown, almost chocolate, provided the markings are distinct. The wing has a ribbon-mark, as in the drake, and the legs are like his, orange, but generally of a rather duller tinge.

"At the Birmingham Show in 1872, the heaviest pair of birds in the Rouen class weighed twenty-two pounds two ounces. These were awarded the fourth prize, on account probably of the drake being rather defective in colour; they were at that time eight months old. Mr. S. Burn, of Whitby, was the exhibitor of them, and they were bought at the auction during the show by myself. Six and seven pounds each are good average weights, and larger weights are seldom obtained except by fatting the birds to such an extent that their breeding powers are endangered; and it is very rare that birds over these weights are perfect in colour of plumage and bill.

"The eggs of the Rouens are not so large as a rule as those of the Aylesburys, and they show the same diversity of colour as the eggs of the latter. It would be well here to mention that it is a fallacy to suppose that the size of the eggs has much to do with the size of the parents or the progeny. The most celebrated breeders can aver that the largest birds of their flocks will often lay the smallest eggs.

"In the selection of Rouen Ducks for breeding purposes—that is, for exhibition—the breeder should look more to perfection of markings and shape than to mere weight, provided that the birds are of average size. The most important point, as in other stock, is to see that the birds it is proposed to breed from are really *thorough-bred* and *well-bred*. The drake should not be over eighteen months old at the time of mating, and if he weighs seven pounds it is quite sufficient; for they should *not* be 'made up' to weigh well if wanted for breeding. The ducks may be older, and what I prefer myself is a drake of twelve months with two-year-old ducks.

"For breeding good dark-breasted and dark-'breeched' drakes, I mate the darkest drake I have with the darkest ducks; and for getting ducks of good colour, I choose a dark male bird with light-marked ducks. Although it would be folly to think of exhibiting a duck with a 'cock-

wing' [a wing with feathers growing out the wrong way; ducks are subject to this, like Asiatics], or any other malformation, however large and good in markings the bird may be; still, if a well-bred one, it is quite likely to produce first-class young ones if well mated. The same may be said if the parents have slightly defective bills, or are under sized; in spite of these defects, they may throw some splendid birds, and indeed are very likely to do so if they come from really good stock.

"In selecting birds for showing, you must pay some attention to the rules or custom of the show. If it is stated, or you have reason to know, that *Birmingham rules* will be adhered to, you must pick out your heaviest birds, and not be too particular (though, of course, reasonably so) as to condition and feathering; since at Birmingham the prizes are almost always awarded to the greatest weight. If only the ordinary provisions are made in the rules, besides paying attention to size, the most showy birds should be chosen, and great attention paid to perfection of plumage. During the summer months, until say about September, ducklings will almost always beat older birds, as they are getting into full feather while the old ones are moulting."

Mr. Fowler's notes are so full and explicit as to leave us scarcely anything to add. We may only remark that, like the Mallard, the Rouen drake changes his beautiful plumage for the garb of the female during the summer. The duck is a capital layer.

THE MUSCOVY OR MUSK DUCK seems to be a comparatively distinct species, as the progeny of a cross between them and the more common kinds is found decidedly unfertile, at least when bred *inter se*, though we believe they have been bred with the parent strains. The distinct *habitat* of the wild species is also in favour of this view, for whilst the Mallard extends through the northern regions, including both America and Europe, and probably even Asia, the Musk Duck is found wild only in the warmer regions of South America. Its district ranges from Guiana to Paraguay, but it does not migrate, which is another strong argument in favour of its distinct origin. In Brazil it is extensively domesticated, and is indeed the duck of the country; and it is also domesticated throughout both England and great part of Europe, particularly in Germany. The name is derived from an odour of musk which pervades the skin, but which is not present in the flesh when cooked; and Muscovy is obviously only a corruption of this term.

The Wild Musk Duck is stated by all travellers to be a very active bird, even flying to the trees when alarmed, and passing the night in the same situation, perching upon the branches; which again marks a very wide distinction between *Cairina Moscha* and *Anas boschas*. The nest, too, is sometimes built in the branches, sometimes in a hollow near the water. Some observers have stated that they rear two broods, one in May and one in September, but this is uncertain. Before pairing the males fight desperately, during which they "make the feathers fly" to such an extent as to cover the ground at the scene of combat, and this quarrelsome disposition is strongly inherited by the domestic race.

The general colour of the Musk Duck is black and white, not variegated, but in large patches; but we have also seen pure white, pure black, and a kind of blue dun. The feathers seem very loose, looking as if half had moulted and the rest were just ready to drop out; but the most peculiar and distinctive characteristics are about the head, the cheeks being naked, with a scarlet fleshy space round the eye, and the base of the bill carunculated also with scarlet. The head of the drake is very large, and these appearances are in him far more conspicuous, and give to him, in conjunction with a peculiar leer we have never seen in any other creature with feathers on, an aspect almost diabolical. The drake is very large, having been known to reach ten, eleven, and even twelve pounds, and is destitute of the curled feathers common to other ducks—again marking

distinctness of species—but the duck generally averages only about six pounds, and we never knew one over seven and a half pounds. This again is characteristic of the variety.

The flesh of the Musk Duck is very good when eaten young, but it does not lay nearly so many eggs as the common kinds. They are also awkward birds to keep, the temper of the drake being simply abominable. He persecutes every creature he can manage, and has been known to attack children; as to other ducks, he is fond of seizing them by the neck and holding them under the water till they are drowned, if in any way they "rise his dander." We recollect well an old rascal which belonged to a relative, and was kept in a yard with some Dorkings. The first time the drake attacked him the Dorking cock showed fight, but was quickly demolished, and after that the drake made the poor fellow's life a positive burden to him. His favourite mode of offensive warfare was to rush at the poor Dorking like a battering-ram, and knock him clean off his legs, trampling over him as he fell; and we often wished in a half-hearted way for a good sharp-fighting Game Cock to teach him a lesson or two. For these and other reasons, the Musk Duck can hardly be called a profitable variety.

Several so-called varieties of ducks, such as the Hooked-bill Duck, distinguished by its curved bill; the Crested Duck, with a top-knot; and the Penguin Duck, marked by the downward position of its posterior extremity, need nothing beyond notice. They are noways remarkable either for use or ornament, being simply occasional "sports" perpetuated by the art of man. We shall see in the next chapter that crossing two breeds of geese frequently produces a small crest; but whether the Crested Duck was originally produced in a similar manner it is impossible to say.

THE CAYUGA DUCK, or large Black Duck of North America, should properly have been placed before the preceding; but we mention it last of the large breeds on account of its evident relationship to the variety next mentioned. It has long been prized as a domestic breed in Canada and the United States, but only recently has come into notice in England. It is no doubt descended from the Mallard; breeding freely and producing fertile progeny, and possessing the curled feathers in the tail, which we have seen the Musk Duck does not. The general colour as now bred is black all over, with as much green lustre as possible, which about the head is very conspicuous; but the body is more dingy, and in comparison with the Black East Indian looks positively brown. In good birds the brown is sometimes replaced by a dull purple.

The birds sent to us for portraiture by Mr. W. Simpson, of West Farms, Westchester County, N.Y., consisted of two drakes and three ducks, and were purchased by Mr. J. H. Braikenridge, of Chew Magna, Somerset. One of the drakes appeared injured in some way, as we have often found with imported fowls, especially if the weather has been bad on the voyage. They were all perfectly black when they arrived; but next season two of them moulted a great many white feathers, and one in particular became as nearly white as black. Our American correspondents tell us that it is usual to moult some white feathers on the breast and at the base of the bill the second year; and it will be seen that Black East Indian Ducks offer a striking resemblance in this respect. In specimens long since described in American books on poultry, there seems to have been an indistinct white collar round the drake's neck, which is obviously derived from the Wild Duck, or Mallard, but seems now bred out. Since the reception of our specimens, Mr. J. K. Fowler, of Aylesbury, has imported a trio, which were considerably larger than those sent to us; and this gentleman has kindly furnished the following notes of his experience with them. It will be seen that regarding the appearance of white in the plumage, it is the same as the foregoing:—

"Cayugas are a breed of ducks that have lately come before the notice of the public, and they

appear well worthy of a few remarks in these pages. Lake Cayuga, in the United States of America, is given as their habitat, and they are said to abound there in great numbers.

"In colour they are nearly similar to the East Indians; their plumage being of a bright metallic black, with lustrous green reflections on head, neck, and wings. The bill is a blue-black, and has a very black splash in the middle of it. Legs a smoky orange or brown.

"Their shape is different from the East Indians, and more like the Aylesburys; they have very lengthy necks, and a straight, long head and beak. Their size is quite equal to the Rouen or Aylesbury, and they can with little trouble be made to weigh upwards of twenty pounds the pair. The flesh has a rich game flavour, and when hung a short time in the winter they far surpass the Wild Duck.

"For the farmer they will be a very useful as well as ornamental breed, being hardy, and maturing at an early age. They are prolific layers, and of very quiet habits. It should be stated that, like other breeds of black fowls—Crèvecœurs, Spanish, and East Indian Ducks—the Cayugas show sometimes white feathers on the breast and elsewhere, which, however, does not point to any impurity of blood; and though suggestions have been made that they are merely a cross-breed, I see no sound reason to doubt that they are a distinct variety; for I am told by a well-known fancier, who imported some two years ago, that though two of his old birds since moulting now display traces of white feathers round the eyes, beneath the bill, and a few on the breast; still the birds hatched last season and those reared from them this year show not a single fault, but bid fair to outrival their parents in beauty and size."

It will be seen that Mr. Fowler places the Cayugas very high among the useful breeds of ducks, and we believe he will be found to be correct in this. The flesh is certainly equal to that of any, and we consider superior to all, except the Black East Indian; while the breed seems to fatten and make its growth—weight for weight—on *less food* than either the Rouen or Aylesbury. The plumage also can never look dirty, which will be an advantage in many localities.

Mr. R. Teebay, of Fulwood, Preston, informs us that there was formerly a large black duck in Lancashire which bred true; and, so far as he can remember, they closely resembled the Cayuga, if they were not identical with it. The question is difficult to settle now, but it would be curious if it should be so, as in that case there could hardly be any doubt that each originated from an *independent* black "sport," or offshoot, of either the Mallard or Common Domestic Duck. That the breed was ever found wild round Lake Cayuga, as was at one time supposed, we think there is no good evidence to show. On this subject Mr. Teebay writes us as follows:—

"I do not believe we now have here [in Lancashire] any true-bred black ducks; but in Preston market twenty years ago they were very common, as were two other quite distinct breeds that have disappeared. The black ducks were very large, and bred true to colour. There were also blue ducks, nearly the colour all over of an Andalusian hen, and the drake the same, except being rather darker on his shoulder-coverts and head; these also bred true to colour, and were very slender and tight-feathered in their general appearance. The third variety were called 'duns;' they were of a yellowish dun-colour throughout the whole plumage, the drake being rather darker on his back than on the rest of his body. These last were the largest; but were more sluggish, and required more attention than the others, but did not need so much water. I also remember a breed particoloured, with immense top-knots. For several years now, however, nearly all the young ducks that are brought to Preston market are Aylesburys, or crosses from them, as they are bought chiefly for the Liverpool poulterers, who will give more for them than for the others.

"I recollect asking a gentleman who has spent many years in America, trapping and shooting,

about the Cayugas, and he appeared to know them well. He, too, said they were so similar in appearance to the English black duck that it was hard to tell the difference. He seemed to think the breed had at some time been taken from England, and that the difference in flavour might easily be accounted for by the change of climate, but especially by the difference of food and water-plants. He particularly mentioned some duck celebrated in America for its exquisite flavour (I believe, but am not sure, it was the Black East Indian),* this being attributed to its feeding on the wild celery; and I understood him to say that if they were confined for some time before being killed, and had plenty of celery chopped fine in their food, they took just the same flavour. But whether the Cayugas were taken from England or not, if they prove as good as the old Lancashire Black Duck they will be very valuable."

The legs of the Cayuga Duck are generally of a very dark dusky orange-colour, covered over by a fine network of black lines. They should be for show as dark as may be, while the plumage should be as glossy as it is possible to obtain. By a cross with some of the largest and best of the Black East Indian the colour could probably be much improved, while size could soon be recovered again. Of course the white feathers which so trouble breeders in both varieties must be bred out as soon as possible; and, judging by past difficulties which have been overcome in various breeds of fowls, we have little doubt a few years will see much improvement in this respect.

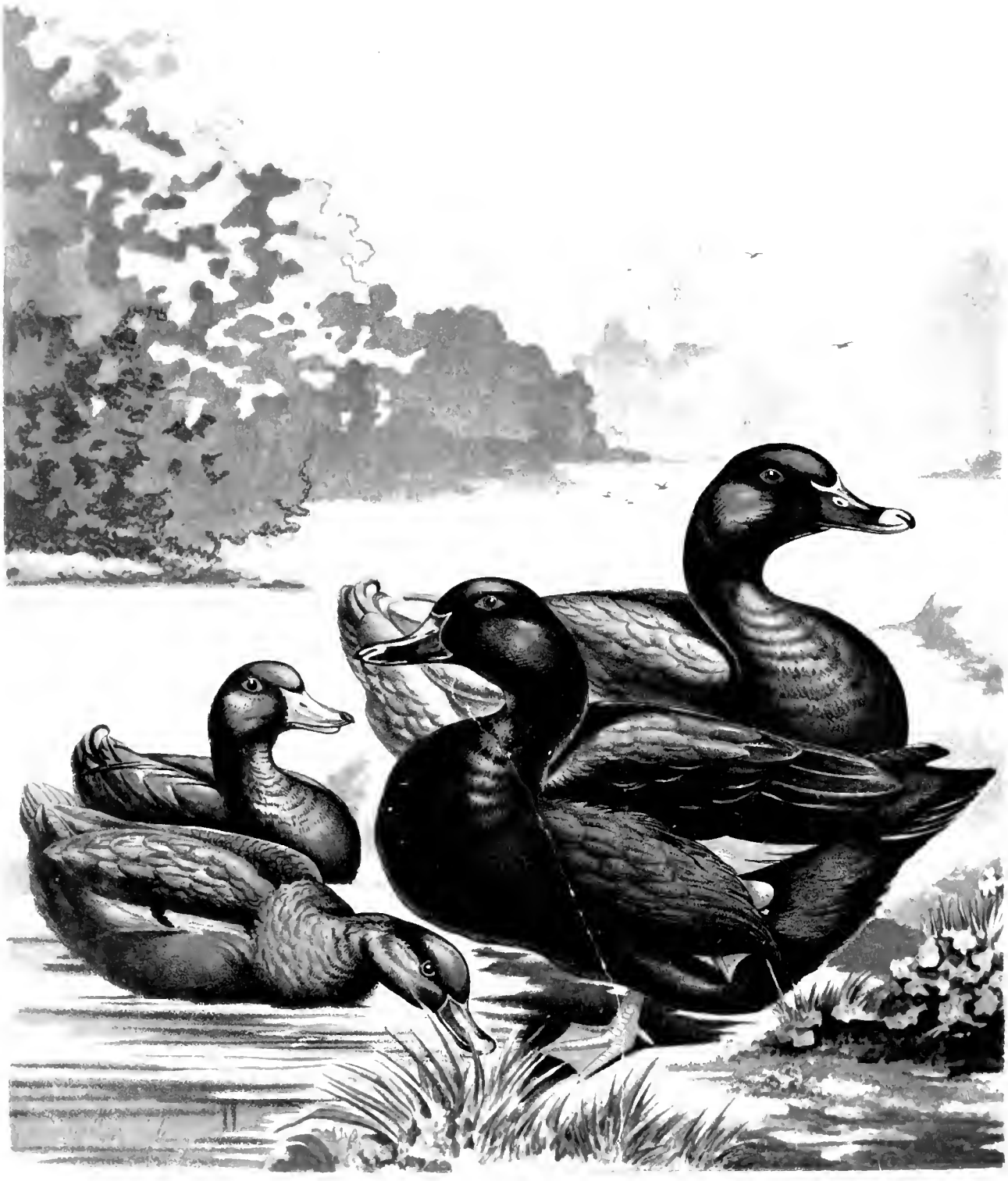
THE BLACK EAST INDIAN DUCK, known also by many other synonyms, as Mr. Serjeantson has mentioned, is very evidently allied to the foregoing, and stands midway as it were between the useful and the purely ornamental varieties. We once thought differently; but the many opportunities we have lately had of comparing both have removed all our own doubts on this point. Not only is the colour identical, allowing for the care with which a green gloss has been sought by breeders of the small or "fancy" variety, but both are liable to the very same faults or spots of white, and Mr. Sainsbury's remarks show that even in economic qualities the two breeds are identical. Which, however, was the parent, and which the offspring, it would probably be now as idle as fruitless to inquire.

The Rev. W. Serjeantson has kindly furnished us with the following notes on this beautiful breed of ducks:—

"Black East Indian Ducks, like many of their companions in the poultry-yard, rejoice in a multiplicity of names—Buenos Ayrean, Labrador, Black East Indian, and of late I have seen them called by a new name, Black Brazilian; but all these are equally inappropriate.† They are not known in a wild state in any part of the world; and I think the most reasonable supposition is, that they are a variety of, or, as gardeners would say, 'a sport' from, the common Mallard (*Anas boschas*), as are also the recently-imported Cayuga Ducks from America. They have been kept in this country for many years, and have put in an appearance regularly at poultry-shows from the very first. Indeed, they used to be shown in greater numbers years ago than they are now, the rage for Mandarins, Carolinas, &c., having caused them to be rather neglected of late. Still, several new exhibitors of them have appeared in the lists the last year or so, and I have no doubt we shall soon see them in as large numbers as ever. Their beauty is so great, and they give so little trouble, requiring no pampering or extra feeding for exhibition, like the Rouens, &c., that they must always have plenty of admirers.

* We think the duck here mentioned more likely to have been the Canvass-back; but both feed on and acquire the flavour of the wild celery.

† Mr. J. K. Fowler says they are found in the Punjaub; and we believe the Zoological Gardens obtained their first specimens from Buenos Ayres. Two of the names may perhaps be thus accounted for.



"As regards plumage, the drake should be of a most brilliant, lustrous, I might almost say dazzling, green throughout, *i.e.*, the whole of the upper part of the body and wings; the breast and under parts being deep black. Sometimes the breast-feathers are tinged with reddish brown, but that is a defect which absolutely disqualifies the bird, if the judging is good, and a drake so marked should never be bred from. The feet and legs should be as nearly black as possible; they get, however, lighter with age, showing in course of years more or less of an orange tint.

"With respect to the bill, I mean the *drake's* bill, 'doctors differ.' My opinion (and I am glad to know that I am in accord with most of the oldest breeders) is that it should be a sort of pale yellow washed over with blackish green, the colour being laid on *thinly*, as it were, so as to give an almost transparent effect, and shaded off at the tip into a kind of slate-colour. If the yellow is too *deep*, and, as it were, too *thickly* laid on, it turns in course of time into a bright orange, which is very objectionable. There should be no black spots or patches whatever upon the bill. On the other hand, one of our most eminent judges prefers the bill as dark in colour and as near black as possible. But I really do think this is (not to put too fine a point upon it) a great mistake. The lighter bill harmonises and also contrasts so well with the green plumage, that a great beauty is lost by requiring the black bill. Bills of either colour can be produced by a proper selection of stock birds, or rather, I should say, *young* birds can be shown with bills of either colour; for bills will get lighter with age, and however dark they may be at, say eight months, they will be much lighter at eighteen months.

"The duck should be in all points except the bill as like the drake as possible; not that a duck ever was as green as a drake, or at least as a drake ought to be. As usually seen, the ducks are of a brownish black, *slightly* glossed with green on the back and wings, and with a bright green wing-spot. Ducks that are *really green* are very rare, and if good in other points, such as size, symmetry, and bill, are very valuable. I showed one myself at Birmingham five or six years ago; and Mr. Pittis exhibited a most beautiful one at the Crystal Palace in 1871, bred, I believe, from a drake which I sold to him the year before. The pen was claimed at a high price by Mr. Sainsbury, who bred two young ducks from them the following season, which were equally good; and he exhibited the mother and her two daughters at the Crystal Palace, Birmingham, and other shows last winter, but he was not so successful with them as he ought to have been, or indeed as he deserved to be; for they were by far the three best ducks of the breed ever seen together. Mr. Burn also showed an exceedingly brilliant duck in 1871, and I think also in 1872, but it was not so small as those of Mr. Sainsbury. These few that I have mentioned are almost the only ones I have ever seen which at all approached perfection, and my reason for mentioning them is to show the extreme rarity of such brilliant colour.

"The bill of the duck should be deep black; it is generally shaded off at the tip to slate-colour, but the less of this and the darker the bill the better. Ducks are often seen with patches of green upon the bill, and some of the judges do not seem to object to it—at all events, I have seen a duck in a first prize pen at Birmingham so adorned—but I think it a great blemish, indeed quite a disqualification. I would never award a prize to such a duck, nor would I keep such a one in my own yard.

"All Black East Indians, both drakes and ducks, are liable to throw white feathers. These appear most usually at the base of the lower mandible and round the eyelids. Sometimes a white feather or two shows itself on the breast. I do not mind a few, if only a few, at the base of the lower bill. I never yet saw any bird of the breed absolutely free from white feathers. If none are to be seen the first year, some are sure to show themselves after the first moult, often sooner than that; and the most provoking part of it is that the smaller and more delicate, and on that account

the more valuable the bird is, the more liable it is to this fault. Big coarse strains, which are of no value except for the table, are comparatively exempt. I have had many old birds, Birmingham winners in their youth, which have in the course of years become more than half white; and Mrs. Haynes, who has kept the breed much longer, I fancy, than any one else in the kingdom, has told me that she has experienced the same thing.

"In form, both drakes and ducks should be very neat, elegant, and symmetrical, with small, high-bred looking heads and bills. In size, to be in the fashion, they cannot be too small. Mr. J. K. Fowler, who has had great experience of the breed, says, in a work I have seen, that they should weigh 'as little as two pounds if possible.' I have had many of this weight, and I have one now, a duck, three or four years old, which would not draw the scales at one and three-quarter pounds; but as a rule I think from two and a quarter to two and a half pounds is a fair weight for a *duck* for exhibition; drakes are rather heavier. I fancy if the whole class at Birmingham were weighed, very few pairs would be found under five pounds. I must, however, say I think it is a pity that smallness should be made so much of in judging a class of Black East Indians. It may be said that I, of all men, ought not to raise this objection, inasmuch as I used often to beat my competitors chiefly through the smaller size of my ducks; but still I do think it, and I know it is the opinion of nearly all the breeders of this variety. Years ago, when Black East Indians were almost the only 'fancy ducks,' it might have been all very well to try and make the breed the 'Bantams,' so to speak, of the duck tribe; but in these days, when Mandarins, Carolinas, Teal, *et hoc genus omne*, are spread over the country in such numbers, I think Black East Indian breeders might be allowed by the judges to look to utility as well as to fancy. This variety naturally is very hardy and very prolific, but it is equally certain that the smaller they are bred the more delicate they become, and the less prolific. They are capital eating too, quite equal to their progenitors, *Anas boschas;* but that good quality is of little use if there is nothing on them to eat. I would not have them brought out as rivals to the gigantic Aylesbury and Rouen, though this might be done, and in no long time either, by crossing them with their unwieldy cousins the Cayugas; but I would say, let them be shown of a fair average size, and then let the judges decide by brilliancy of plumage combined with symmetry and elegance of form.

"Black East Indians follow the rule that 'like breeds like.' There is no secret in breeding them for exhibition, except procuring in the first instance the best birds possible. If the parents are good, the offspring will be so also. On the other hand, if you breed from birds too large, or of bad colour, or with bad bills, the young will in all probability be the same. It takes many years to breed down a stock of big ducks into little ones, but one cross of strange blood is generally enough to give increased size, which it takes a long time to get rid of again; and therefore if prize-winning be the object sought for, any admixture of fresh blood must be used with great discretion.

"From what I have already said, it will be guessed that I have not found this breed either prolific or hardy; but the fault, as I have also shown, is the fault of the fashion, not of the breed. There are plenty of strains of this breed which are hardy and prolific enough for anything, but they are useless for exhibition. A friend of mine in Lancashire rears every year about a hundred merely for the table. But if the parents are very small, the shells of the eggs are very thin, and apt to be broken during the time of sitting; and when they are hatched, the young are very delicate for the first month or so; after that I very seldom lose one, or have any trouble with them.

"They require no special management. I generally turn a drake and two or three ducks into my garden in the early spring, and let them stay there for a month or six weeks. Except when the ground is frozen, I never feed them, but make them find their own living, and a very good living they make of it; the quantity of slugs and worms they put out of sight is something enormous.

Again, in the autumn I turn the whole flock of them into a field, in which there is a small pond, or, as it is called in North Shropshire, a 'pit,' and there I leave them to their own devices, and until the acorns have ceased falling they never ask me for food. They can fly like Wild Ducks, but never go away, and I have never lost any; but, at the same time, I would advise all who introduce them into their yards for the first time to take care, by clipping or tying the flight-feathers, or in some other way, to stop all flying until they become used to their new abode. I have known many lost through want of this precaution.

"Ducks are notoriously bad to manage when ill; no medicine seems to have the least effect. But several times, when mine have refused to eat, and were pining away, as they do sometimes, I have cured them by keeping them in a warm place, and cramming them with bread and milk. Whether it is that their throats get sore, so that they cannot eat, I know not; but this is the only remedy I have ever found of any use.

"In conclusion, let me hope that the gentlemen who may be appointed judges at future shows will take into consideration my suggestion as to *size*, for I feel sure that equally beautiful, nay, more beautiful, ducks will be shown if we are not so tied down to size, while the gain in point of constitution, prolificacy, and general usefulness will be immense."

Mr. G. S. Sainsbury, of Devizes, also well known as a breeder and successful exhibitor, has furnished the following additional notes upon this breed, in which, as will be seen, he speaks particularly of their economic merits:—

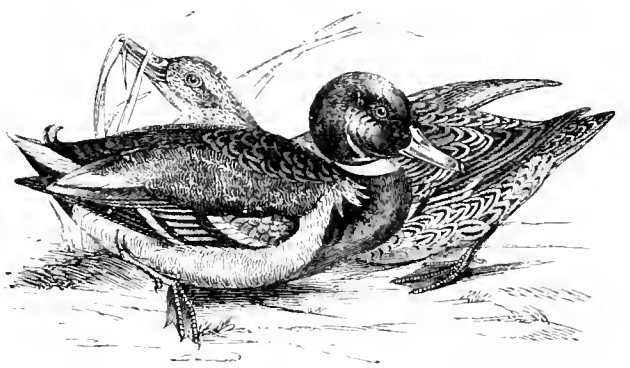
"There are some fanciers who would assign to Black East Indian Ducks, amongst water-fowl, the same position that Bantams hold amongst fowls. To this I must ask permission to demur; they are, truly, fancy ducks, but not fancy ducks only; they combine the useful with the ornamental, producing, as has been remarked, the greatest quantity of meat with the smallest proportion of bone of any denizen of the poultry-yard. As a Black Duck breeder of nearly twenty years' standing, I certainly can say I consider them one of the most interesting and useful varieties of water-fowl any one can keep; they are good layers, and if not more than two ducks are allowed to run with a drake, their eggs are as fertile as others. The ducklings, when first hatched, have black bodies with a shade of yellow on the breast; the feet, legs, and bill being jet black. They require care for the first few days; their food should consist of chopped eggs for the first two days, after which they will thoroughly appreciate bread and milk; but the great thing is not to overfeed them or let them go to the water too early, as they are subject to cramp. When once old enough to do so, the more exercise they have the better, as they seldom come to perfection in a close or confined yard; in fact, I have often seen birds perfect in colour, of a size and shape much more befitting a Rouen or Aylesbury than the neat, compact little East Indian, and I believe this may be entirely attributed to their not having had sufficient space and exercise in their young days; and in these remarks I believe to be embodied the essentials necessary to the successful rearing and management of them. I might add, they do much better hatched under ducks than under hens.

"In breeding for successful exhibition, the points to be aimed at are, above all, a small size—the smaller the better—and neat shape, round heads, with short bills, and short bodies. The colour should be pure black, free from white or brown feathers, with a bright green metallic lustre throughout; the duck's bill should be a pure black, free from a shade of green, as we often see. Some say that of the drake should be also black, but I prefer an olive-green bill, and however black they may be at first, they seldom retain that colour; a yellow bill in a drake is a decided disqualification, though doubtless the older they are the lighter the colour becomes. The feet and legs should also be nearly black. It will be seen the great thing to be aimed at is small size, neat shape, lustrous plumage (free from foul feathers), colour of bill and legs, shape of bill and

head. However perfect the birds might be, they generally throw some white feathers after the first year; in fact I have known them in course of years become almost pure white.

"These ducks have quite justified the many pleas that have been made by their fanciers for a class to themselves; and wherever it has been given it has been nothing unusual to see them represented by sixteen, seventeen, eighteen, or even twenty pens; but they have a claim for greater consideration at the hands of poultry committees, and I would add judges also, than they receive, inasmuch as they are generally bred by the exhibitors, and not imported for exhibition at one or two shows, and then offered for sale, as is the case with so many of the ornamental varieties of water-fowl against which they have so frequently and unjustly to compete."

CALL DUCKS are less seen at poultry-shows now than formerly. At one time they were the principal "fancy" ducks shown; but of late the Mandarin, Carolina, and other more striking varieties have pretty much superseded them as exhibition birds, though they still retain their popularity for lakes and other ornamental waters, and are occasionally used as decoys on account of their constant utterance of the shrill "call" from which they take their name. For show they



GREY CALL DUCKS.

should be as small as possible, but very good ones are rather rare. Mr. Serjeantson—a capital judge—informs us that the best he has seen for many years were shown at Birmingham in 1872, by Mr. Robertson Gladstone, of Liverpool.

There are two varieties of Call Ducks, termed White and Grey, which resemble respectively Bantam Aylesburys and Rouens, except that the bills of the white variety are a bright yellow. Fanciers also prefer a slightly different shape for the heads; those birds being most esteemed which have very short bills and prominent foreheads; or, as a pigeon-fancier would call it, a "good stop" to the bill. On the water Call Ducks are very active and lively.

THE MANDARIN DUCK, called also the Chinese Teal, and by naturalists *Aix galericulata*, is certainly the most gorgeous of all the ornamental duck tribes; and having been exhibited for many years, it is matter of astonishment that it should not as yet have been described in even the most pretentious works on poultry. It very closely resembles the variety next on our list, and at most large shows now a special class is offered at which either Mandarins and Carolinas alone, or in some cases, "any other ornamental variety except black" are allowed to compete together. To class them with Black East Indians, as is still done at some shows, is most unjust to both classes, since, except in the matter of size, there is no common standard of comparison.

In size the Mandarin is very small, though no precise limit of weight can be given.* The shape is tight and neat-looking, but the plumage of the drake almost defies description, nothing in the poultry-world being so bright and gorgeous. The head has a large long crest, pointing backwards, and which can be raised or lowered at will; the colour of this crest being green and purple on the top, shading into chestnut and green in the long feathers which extend backwards. A broad stripe of rich cream-colour extends from the front of the sides of the head, across the eye, to the back of the neck. The neck is furnished with a collar or ruff of rich brownish red feathers, somewhat resembling hackles, and the front of the neck and sides of the breast are a rich claret or purple. Across the shoulders are two beautiful stripes of clear white, each shaded with black, behind which the sides of the bird are of a greenish or ashy yellow-grey, beautifully and most delicately pencilled in very fine lines with dark grey or black. The wings are furnished each with a peculiar shield or fan, standing nearly erect, and which are of a bright chestnut colour, beautifully edged with green or blue. The feathers of the back are a brilliant light brown, and the under parts white or nearly so. The quills or secondaries are brownish-grey, edged on the lower web with white. The bill is crimson, the legs a lightish pink, and the eyes a bright black.† The garb of the duck is much plainer, being a mottling all over of greenish brown, with greyish under parts. About May the drake loses his conspicuous feathers, and even his wing-fans and crest, and becomes coloured very much like the female; in August he begins to resume his fine clothing, and by September is again in full plumage.

In China, domestic specimens of these ducks are called *Li-chi-ki*, and are very highly prized, being considered to exhibit striking examples of conjugal affection and fidelity; whence it is common to carry a pair in a gilded cage in marriage processions, and afterwards present them to the newly-married pair, as worthy objects of their imitation. So highly are they valued, that when Dr. Bennett wrote to a friend in China to buy him a pair, he was informed by this friend that he could send him two live mandarins to Australia with far greater ease than the Mandarin Ducks. The same authority gives the following as an instance of the conjugal fidelity, for which, as well as for their great beauty, these ducks are so prized by the Chinese:—"One day Mr. Beales' aviary at Macao was broken open, and the male bird stolen; his poor mate remained in a retired part of the aviary, and refused to be comforted. She would scarcely take any food, and allowed her plumage to become dirty; in vain did another drake endeavour to console her for her loss; she rejected all his advances, and remained disconsolate. After some time the lost bird was discovered in the hut of a Chinese of the lower class, and was brought back again. As soon as he recognised his old abode, he expressed his joy by flapping his wings and quacking vehemently, and no sooner did his mate recognise his voice, that she almost quacked to screaming with ecstasy, and flew to meet him, and both expressed their joy by crossing necks and quacking together. Next morning the returned spouse fell upon the unfortunate drake who had made advances to his mate in his absence, pecked his eyes out, and otherwise so disfigured him as to occasion his death in the course of a few days."

The exact date of the first introduction of these beautiful ducks into Europe is uncertain. In 1850 Sir John Bowring obtained with the greatest difficulty a few pairs to send to England, and it is certain that before this two pairs had been obtained by an enthusiastic fancier at Rotterdam. It is also pretty certain that nearly all the domesticated specimens in Europe have been bred from these two importations; but we know that of late Messrs. John Baily and Son have imported

* See Mr. Hewitt's remarks on this point under the head of Carolina Ducks.

† The eye has been described by various naturalists as "orange-red," but we speak from examination of many specimens.

others. Shrenck states that the Mandarin Duck is a wild species, appearing about May in the various countries watered by the river Amoor, and disappearing again about August. At this season it is met with in flocks, sometimes large and sometimes small, but so shy as rarely to come within shot. He also states that he has often seen the birds perching upon trees, which is no doubt a habit, being certainly common to the Carolina variety. The Chinese mandarins obtain their specimens from the country north of Pekin.

The Mandarin Drake is somewhat quarrelsome, especially when penned for exhibition. Care should therefore be taken only to show birds which have been previously mated, for want of which precaution we have seen the duck killed by the angry male. Even with this precaution such accidents will sometimes happen with birds not perfectly tamed; and small, recently-imported specimens can only be shown at some risk.

THE CAROLINA DUCK, also called the Summer Duck or Wood Duck of America, is manifestly closely related to the foregoing, and has received from naturalists the same family name of *Aix sponsa*. The drake possesses a beautiful crest, but is without the singular wing-fans which give so peculiar an appearance to the Mandarin. For the following notes upon this beautiful variety we are indebted to one of its most successful exhibitors, Mr. Matthew Leno, of Dunstable :—

"The Carolina, or Summer Duck, is a native of North America. It is certainly one of the most beautiful specimens of ornamental water-fowl, and no poultry-show is complete without it, where, if in full plumage, it never fails to have plenty of admirers. It is said rarely to visit the sea-shore, and in its habits to be somewhat solitary, while, being also strictly monogamous, it is usually seen flying singly or in pairs. The note of the male is like the syllables 'Peet, peet.'

"The adult drake has a red bill margined with black nearly to the tip, with a spot of black between the nostrils, and a sort of hooked nail at the extreme point. The irides of the eye are orange red. The crown, front of the head, and pendent crest are a rich glossy bronze green, changing into violet to finish off, and beautifully marked with a line of pure white running from the upper mandible over the eye, with another band of white proceeding from behind the eye; and both mingling their long plumes with the green and violet of the crest, produce a very striking appearance. The throat and a kind of collar in front of the neck are pure white, curving up in the form of a crescent nearly to behind the eye. The cheeks and side of the upper neck are violet, the breast dark brown or chestnut tinged with violet [we should call it claret-colour], and marked with small white spots, which increase in size till they reach the white of the belly. Each side of the breast, at the shoulder, has a large crescent of white shaded by a broader one of deep black immediately behind it. The sides of the body, under the wings, are thickly marked with fine undulating parallel lines of black over a ground of yellowish drab, the flanks being ornamented with broad semicircular bands or stripes of white shaded with black. The sides of the vent are light violet; the tail-coverts long, of a hair-like texture at the sides, and in colour of a deep black tinged with yellow. The back is dusky bronze tinged with green; scapulars blackish green and purple; tail tapering, and black glossed with green above, dusky below; wing-spot, or speculum, blue and green. Legs and feet yellowish red, with strong hooked claws. About June the plumage changes to nearly the same colour as the female, the drake resuming his brilliant dress in September.

"The head of the duck also has a small crest. Behind the eye is a bar of white, the chin and throat also being white. The head and neck are dark drab; breast a dusky brown marked with white spots; back and part of the wings dark glossy bronze brown. The brighter the reflections of gold and green over the duck the more she is esteemed in value. She has a wing-spot like the male, but not so bright.

"The nests of the duck, when wild, are mostly built in the hollow of a tree, whence the name of Wood Duck, frequently given to them. The nesting-time is April, May, and June; the eggs are of an oval shape, and nearly resemble polished ivory in colour. It is a singular fact, but well established, that when the young are hatched, the parent carries them down to the water from the tree.

"The Carolinas bear confinement very well. They are now kept by many fanciers, and I think nothing can be prettier on a piece of ornamental water than these splendid birds. They will, however, only *breed* in confinement under very favourable circumstances, and great care is then necessary to protect them from rats and other vermin."

With regard to the Carolina Duck flying in pairs, there is some difference of opinion among naturalists. Wilson states the matter so in his "American Ornithology;" but Audubon, who in such matters is generally preferable, expresses downright astonishment at such a statement, and assures his readers that he has actually seen "hundreds" in a single flock, and has known fifteen to be killed by one shot. He also gives most interesting particulars of its habits. The flight, he says, is remarkable for ease and elegance, and that the bird passes through the woods with almost the facility of a pigeon, and making little or no noise from its wings. Incubation lasts twenty-five days, and is generally carried on, as stated by Mr. Leno, in some hole of a tree, during which time the drake joins the other males, and roams in their company over adjoining lakes. When hatched, Audubon states that, "if the nest is placed immediately over the water, the young scramble to the mouth of the hole, launch into the air with their little wings and feet spread out, and drop into their favourite element; but whenever their birthplace is at some distance from it, the mother carries them to it one by one in her bill, holding them so as not to injure their tender frames. On several occasions, however, when the hole was thirty, forty, or more yards from a pool or other piece of water, I observed the mother suffered the young to fall on the grasses and dried leaves beneath the trees, and afterwards lead them to the nearest edge of the next pool or creek." Wilson was told by an eye-witness that he had seen a Carolina Duck carry down thirteen young ones from her nest to the ground within ten minutes. She managed it by seizing one at a time with her bill, by the wing or back of the neck, and thus bearing them to the foot of the tree, from which she led them to the water.

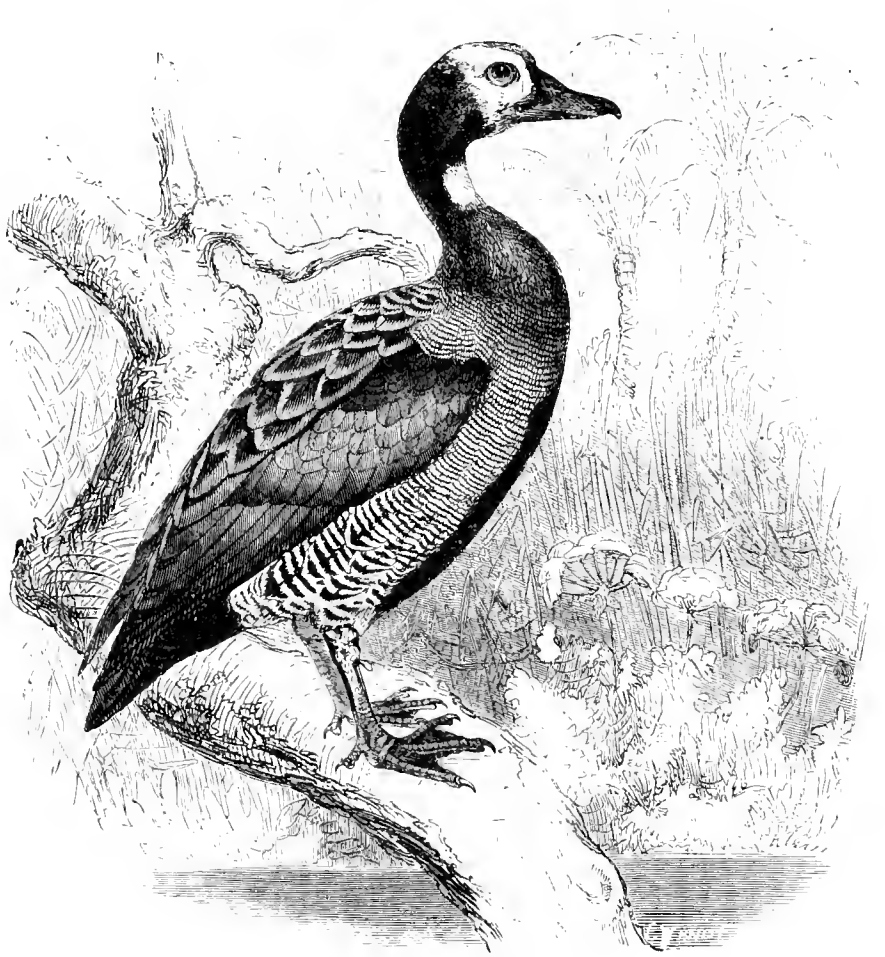
With regard to the size of the Summer Duck, as in that of the Mandarin, no fixed standard can be given. Some prefer them "as small as possible," while other good judges seem to prefer "a good big bird." Mr. Leno, who has perhaps kept them more largely than any one else, writes that he considers size should have nothing to do with judging them, but that, be this what it may, the clearest and most brilliant in colour should receive the prizes, though he rather leans to small size. Such is our own view; but we also think that as time goes on the larger size will come most into favour for practical reasons, which are admirably put in the following remarks by Mr. Hewitt on these beautiful birds:—

"As to Carolinas, I find that the crests become more and more developed as years pass by; and if the birds are carefully moulted, by proper food and attention, the colours become as time goes on more brilliant and intense throughout the entire plumage of either sex. In the female Carolina the white round the eye becomes by age greatly increased in size, and frequently meets over the base of the bill, forming a band of white across the forehead of feathers half an inch in width: the lustrous character of her whole plumage is also remarkably improved. As I never kept the *same* Mandarins beyond the third season, I cannot speak so decidedly of them, except that the crest, at least of the male, annually improves in size and colour.

"My experience of both Mandarin and Carolina Ducks is, that they very considerably increase

in size as they become quite tame and domesticated. This remark applies equally to both sexes; and I have now (1873) by me a pair of Carolinas, of which the duck has invariably laid during the last *seven years*—a strong proof of both longevity and doing well in confinement. These birds are very nearly as large as widgeons. I never in my own knowledge knew a pair of very small wild birds—Mandarins or Carolinas—breed at all, until time had rendered them reconciled to their new situation."

The surpassing beauty of both varieties renders thorough domestication so desirable that we sincerely trust no prejudice in favour of extra small size will be allowed to interpose difficulties in the way.



WHITE-FACED WHISTLING DUCK (*D. Viduata*).

THE WHISTLING DUCKS.—Some of the varieties known as "Whistling Ducks" are of great beauty, and are not unfrequently seen at shows. Like the Mandarins and Carolinas, they are fond of perching on trees, and are on that account also called "Tree Ducks." Mr. Leno has given us the following description of the two varieties best known:—

"The Red-billed Tree Duck (*Dendrocygna autumnalis*) is the prettiest of the Whistlers. It is occasionally exhibited at our poultry-shows, and generally in very fine condition. The head from base of beak is brown, shading into a darker brown stripe over the back of the head and

upper neck; bill red; cheeks and throat drab; lower neck and upper breast brown, shading into drab; breast and thighs black; back and wings dark glossy brown; tail black; around the vent black, with white spots; feet and legs of a pinky flesh-colour. The female is rather smaller than the male, and less brilliant in plumage; the marking being the same.

"The White-faced Whistling Duck (*Dendrocygna viduata*) is a very pretty bird, and much esteemed by fanciers, being mostly seen at poultry-shows in the class for ornamental water-fowl. The *Viduata* is not, however, so rare or pretty as the *Autumnalis*. Head from base of bill to behind the eye and under the jaw, white; back of head, also back of neck, black; a black band also running round the throat; below the throat a patch of white; bill black, except around the nail at tip, which is of a leaden colour; front of neck chestnut; lower part of back of neck slightly pencilled; side of breast pencilled, the pencilling being black upon light brown or drab; centre of breast and belly black; thighs black; centre of feathers on back and wings dark brown edged with drab; tail black; legs and feet lead-colour. The female is rather smaller than the male, and, although the markings are the same, the colours are not quite so brilliant."

THE BAHAMA DUCK (*Pœciloneta Bahamensis*) is occasionally shown, and is a pretty bird, the plumage being chiefly light brown pencilled with dark brown. There is an almost similar species found at the Cape of Good Hope.

THE JAPANESE TEAL (*Querquedula formosa*) is a most beautiful bird lately introduced, and has, we believe, never yet bred in captivity; but as it appears in all its habits and some points in its general appearance to be allied to the Mandarin, this difficulty will however be probably overcome. The top of the drake's head is black or dark grey, below which is a white streak just over the eye. From the eye descends nearly perpendicularly a black stripe, meeting a black patch under the throat, and enclosing a triangular white space in front of the face. Behind this stripe is another of white, behind which and backwards from the eye is a large crescent of bronze-green, the lower horns of which come forward and nearly meet in front of the breast. The breast is a light purple beautifully spotted with black, shading off to white on the under parts. The shoulders and flanks are a beautifully-pencilled silver-grey, with a broad white stripe or crescent on the shoulder at the same place as that on the Mandarin. The wing-spot is bronze-green, bordered above with brown and below with white. The tail and wings are brownish grey, but the shoulder or upper wing-coverts are very peculiar, being long and pointed like hackles, and falling over the wings. These hackle-feathers are black in the centre, edged on one side with brown and on the other with white, and give a very smart appearance. Under the tail is black. The female is a plain bird, not unlike the female Mallard.

THE FALCATED DUCK (*Querquedula falcaria*) has similar hackle-like appendages to the wings. The drake is most beautifully pencilled on the body with black on a silver-grey ground; the head purple beautifully glossed with green, and having a crest of the same colour; the throat white, below which is a collar of green, and below that another ring of white. This bird too has never bred, and only one or two have ever reached this country, but in habits it is similar to the foregoing. In beauty we consider these two varieties rank next to the Carolinas and Mandarins.

Many of the wild British ducks have also been shown from time to time, and some of them are very beautiful, while they can be often procured of the dealers in Leadenhall Market, by those who have the opportunity, at much less expense than the foreign varieties. The wild Mallard

itself has been shown; besides which there are the Teal, the Garganey Teal, Shieldrake, Shoveller, Pintail, Wigeon, Pochard, &c. Few of them will breed in confinement as a rule; still they are most interesting and pretty pets; the Garganey Teal especially, with its exquisitely-pencilled plumage, being a bird of remarkable beauty.

THE SPOTTED-BILL DUCK.—One of the latest introductions is the duck thus named, which attracted considerable attention from "duck-fanciers" at the Crystal Palace Show of 1872, and respecting which, and the management of these foreign or wild exotics generally, we have been kindly furnished with the following notes by the Rev. W. Serjeantson, of Acton Burnell, Shrewsbury:—

"The ducks which I sent to the Crystal Palace and Bristol Shows last winter were Spotted-Billed Ducks, *Anas poecilorhynca*. Several couples were sent over to England from Cawnpore by a friend of mine last summer, and of those which survived the voyage, two pairs were kept at the Regent's Park Gardens, and the other two pairs were sent to me as soon as they had recovered their health and strength under Mr. Bartlett's skilful nursing. I believe these four pairs are the only ones in Europe at the present time. They are very handsome ducks. The bill is jet black with a red spot at the base, and a yellow tip, whence their name. The breast of the drake is pale brown, beautifully marked with dark brown spots, reminding one of the brown spots on a big trout. The wing-spot is larger and of a brighter green than in any other duck I know, and has a band of black and another of white both above and below it. The tertiaries are long and particularly broad, and very conspicuous, the outer web being white. These are their most noticeable points. The marking of the duck is less distinct, and the colour less bright.

"The gentleman who was kind enough to send them, writes in a letter to me, 'We in Cawnpore always reckon it the best duck for the table of all that are found in India. There is little doubt that the breed may be kept up, if the birds can be brought to England; and I think that they may be made the basis of a very fine domestic breed.' So may it be! I am looking forward with great interest to next spring, hoping to see this prediction fulfilled.

"I have several other varieties of fancy ducks, which all run together in an orchard something less than an acre in extent, surrounded by wire netting or high palings. They have for companions Black East Indian Ducks, Black Hamburghs, Japanese Bantams, and Fantail Pigeons (by the way, I may here mention for the benefit of 'those whom it may concern,' as there are disputes on the subject, that the Hamburghs and Bantams have been thus running together for two years without the least ill effects, neither of them interfering in any way with the other.) The Fantails have their own particular meals at another time and place, but they generally fly down to take their part in the scramble which ensues among all the ducks and fowls when the food is scattered among them on the grass. The food consists generally of a mixture of equal parts of barley-meal and sharps, varied with Indian corn and small but sound wheat. There is a small artificial pond supplied by a spring for the ducks, and on each side of it I have planted a thick mass of laurels, rhododendrons, &c. The fowls are allowed to run in these during the autumn and winter; but at the beginning of the breeding season they are fenced round with wire netting, and reserved for the ducks alone, small nest-boxes being put among them for those of the ducks that choose to make use of them.

"Fancy ducklings are better reared under small hens or Bantams, and I think it is of great importance that they should always have a warm dry bed in all weathers. With this view I have had *loose* wooden floors made to all the coops, which are cleaned out every day, and a little dry grass or hay scattered over them, just enough to cover the boards. (For chickens I use dry sand or sandy soil). One great advantage of the floors is that the coops can be put in the garden or

anywhere apart from the other fowls and chickens, even on the lawn or croquet ground; and if they are moved now and then, so as not to bleach the grass, no mark is made, and no harm done, while the young birds enjoy that inestimable benefit, *fresh* ground. They may have the same food as young chickens, with the addition for delicate ducks of very small strips of raw meat, if worms and insects are not very plentiful. A little canary-seed or groats in their water-pan, and also a supply of duckweed (*Lemna minor*), is very good for them.

"Most of the foreign ducks are hardy enough to stand our winters, especially if they have some thick bushes or other cover to retire under; but in severe frost, to be on the safe side, I usually drive all my ducks into a cart-shed about twelve feet square. It is littered down for them with straw or fern, and there they stay until the frost breaks up.

"All wild ducks very soon get tame, if properly managed and a few simple rules attended to. One of the most important of these is never to come upon wild or shy birds suddenly, so as to take them by surprise, and especially if you are wearing clothes different to those in which they are accustomed to see you; always approach them slowly and quietly; never let them think they are being pursued. If, while walking through their domain, you cross their path, stop, and wait for them to go by; or if you *cannot* wait, turn back yourself, and go some other way. *Never handle them;* or if this cannot be avoided—as for instance in sending them to a show—at all events, let it be done quietly and without noise. Nothing makes them so shy as being driven about or caught."

As will be gathered from Mr. Serjeantson's remarks, it is by no means easy to persuade the smaller fancy ducks to breed in confinement, and nearly all of them require their strong powers of flight to be in some way restrained. By far the best way of effecting this latter object is to "pinion" them, as it is called, or cut the flight-joint of the wing entirely away almost close to the junction or knuckle; but on this operation, and breeding and management generally, we have again been favoured by Mr. Leno with some practical remarks, as follows:—

"The breeding in confinement of Carolinas, Mandarins, Whistling Ducks, and other small ornamental water-fowl, is much desired by amateurs, but I regret to say is not to be attained except under very favourable circumstances. To give them every possible chance a nice piece of water is required, and having plenty of cover, such as evergreens near the pond, so that they may be well secluded. During the breeding season especial care is required to keep them as quiet as possible. A stream of water with a good piece wired off, enclosing a nice warm sunny bank as well, is much to be desired; and the larger space that can be given the better.

"I find the best food to be given to adult birds is split maize, barley, wheat, brank, hempseed, and canary-seed, varying the feed occasionally, which should be placed in a shallow pan or trough, adding some water to their corn, also a portion of duck-weed, which is one of the very best things to keep them in health. No more corn than sufficient for a day should be given at one time, otherwise, if left by them, it gets sour; any that may be left from the day previous should be cleared away, and may be given to common poultry. But it is recommended not to overfeed, or they will not come to it with a relish; overfeeding I believe to be the very worst thing in the management of any kind of stock.

"The eggs, if obtained, should be placed under very careful hens, Silkies being the best of mothers. When hatched and sufficiently nestled, the ducklings should be placed in a coop with their foster-mother, facing the sun, being shaded with some boughs if very hot; a guard, enclosing several square feet of nice turf, must be kept round them for some time, to keep them with the hen, and when two or three weeks old give them, if possible, a larger enclosure. Commence to feed them at first with a small quantity of chopped hard-boiled egg, mixed with a little barley and oatmeal, and a little maize meal; also some of 'Spratt's Poultry Food,' first soaked in hot or

cold water (only just sufficient water to thoroughly soak it); then add the other ingredients in a dry state to the poultry-food, and if carefully mixed it will make a very nice food. The food should be placed in shallow earthenware pans, and after the first day or two a few pieces of very finely-chopped boiled lights or liver will greatly help them, and a few small earth-worms occasionally; also a little canary-seed as they get older. Water should be given rather sparingly, always giving some duck-weed in the same; this duck-weed should be collected in the evening, when numerous small molluscs will be secured with it, which is of wonderful assistance in rearing them.

"They should never be allowed to get old enough to fly before they are pinioned, which may be done very easily with a sharp pair of strong scissors, getting the scissors nearly close up to the first joint of wing, when a quick action will sever the part, taking care not to cut away the little projecting point with about three feathers, near to the elbow of wing, as this serves to protect the part where amputated. After having carefully performed the operation, let them have some clean cold water to dabble in; the blood will then very soon cease to flow. Bring them on gradually to same food as for adults; not forgetting to look well after their safety as well as feeding, for rats are terrible enemies to them."

It will be seen that the great point in endeavouring to breed these beautiful birds is to *imitate nature* as far as possible. A pond with a small island well screened with shrubs is capital for this purpose, and is one great cause of the success at the Zoological Gardens, in Regent's Park, where both Mandarins and Carolinas have bred repeatedly. A small house something like a pigeon-house, fixed on a pole standing in the water, with a little hen-ladder reaching to it out of the water, and shaded with boughs or brambles, is also a good plan; and in such circumstances, if perfectly secured from rats, the ducks may be left to hatch and rear their own young, though hens are to be preferred. It is to be remarked that the smaller kinds of ducks hatch in less time than the larger. Mandarins and Carolinas usually hatch in about twenty-five days; but something depends upon whether the eggs are set under hens, which, owing to the greater heat of their bodies (at least we suppose so, reasoning generally), hatch from one to two days earlier than if the same eggs are set under their natural parent.

JUDGING DUCKS.—After a comparison of many awards, we have arrived at the conclusion that to embody the judging of ducks in a reliable table is neither possible nor necessary. The larger varieties are practically judged chiefly by weight; it being very rarely that there are not plenty of specimens correct in bill and other fancy points. Black East Indians do not seem to us to be judged at all uniformly, some judges appearing to lay far the most stress on smallness, and others on "colour." In our own opinion, out of a total of a hundred points, "colour" should be allowed about forty-five, symmetry twenty-five, and smallness and condition together forty; but there is no uniform practice, and we give this expressly as our own view. Mandarins and Carolinas should be judged almost entirely by the perfection, precision, and brilliancy of their plumage, in which condition will of course have a large share. In the case of many varieties competing together, everything must obviously be left to the judge, who will be guided partly by his views as to encouraging anything new, partly by the merit of the specimens themselves, and partly by his own opinion as to the appearance of each specimen. For this there is no remedy, unjust as it is both to judge and exhibitor; except in the few cases where the liberality of committees allows a judge in such open classes to award "extra" prizes wherever he thinks rare specimens have a fair claim to such a distinction; but we must add that a few pounds spent in this way would prevent much heart-burning, and be well-bestowed.

CHAPTER XXXVI.

GEESE.

THERE are at least three breeds of wild geese known in Europe, the Grey-lag (probably a corruption of grey-legged) Goose, the Bean Goose, and the Pink-footed Goose; but there is very little doubt entertained by any one that the origin of our English domestic bird is to be sought solely in the Grey-lag Goose. The Bean Goose closely resembles this species, it is true; so very closely, indeed, that it is only distinguishable on careful examination, and chiefly by the lesser length of the bill and somewhat greater length of the wings; but though it hence becomes exceedingly probable that both varieties, and possibly the Pink-footed Goose as well, had one common but still more ancient wild progenitor, it scarcely admits of question that through the Grey-lag only have our domestic breeds been developed. The Grey-lag alone breeds freely with the domestic goose, and produces thoroughly fertile progeny; and is, moreover, of larger size than the Bean Goose, which is the only one of the other varieties that could possibly lay any claim to the honour.

The conclusion thus come to, as we have said, by every competent naturalist, is the more remarkable from the fact that the Grey-lag is now comparatively rare in Britain, the smaller Bean Goose being far more common: indeed, nearly all the so-called "wild geese" now brought to market are of the latter variety; the Grey-lag being chiefly found in Europe at the present day in the Orkney and Shetland Islands and on the coasts of Norway, though not so common in Europe alone. It is, however, perhaps more generally distributed than even the wild duck, ranging not only over Northern, or rather temperate Europe (since it is rarely found further north than 55 degrees), but even in Northern Africa, Asia Minor, and Asia itself, being a regular visitor to Northern India. Mr. Blyth states that the regular domestic goose throughout India is in fact an evident hybrid between the Grey-lag (*Anser cinereus*) and the Chinese Goose (*Anser cygnoides*), and that the progeny is fertile and breeds true.

In the migrations of wild geese, the V-shaped phalanx is even more marked than in the case of the ducks, the ranks being rarely broken, whereas a flight of ducks frequently breaks up for a while into a confused mass, and continues thus for some time before the line is reformed. With geese, on the contrary, the line is generally kept till the flock is lost to sight in the distance. They also differ from ducks in seeking an almost exclusively vegetable diet, and passing accordingly much more time upon the land than most ducks do. Most wild breeds lay from eight to ten eggs, and the period of incubation is believed to be thirty days.

With these few remarks upon the wild species, we may proceed at once to the two chief domestic varieties, respecting which we have again to express our obligations to Mr. J. K. Fowler for the following practical notes:—

EMBDEN GEESE.—"It is difficult to say which should stand first in point of merit of the two varieties of geese which we now possess, but I will commence with the White Embden Goose, named from Embden, in Westphalia. This bird should be a pure and spotless white in

plumage throughout, with dark flesh-coloured bill and deep orange-coloured legs and feet; the eyes being bright blue. In carriage they should be very tall and erect, with fine square bodies, which in fat specimens touch the ground. They come to enormous size, as may be judged from the weights of my prize birds at the Birmingham Show of 1872. They were weighed a few days before the show with the following results: the gander (three years old) weighed just thirty-two and a half pounds, and his mate (a goose of the same age) pulled down very nearly twenty-six pounds; the goslings weighed twenty-seven and a half pounds and twenty-four pounds. Weight is naturally lost when they are sent a journey, owing to excitement and change of diet; and the more a bird is fattened the more likely it is to lose weight; hence the weights recorded at Birmingham and other shows are often excelled by the same specimens when at home. A good bird of any breed weighing twenty pounds is considered very fine, and I may observe that for breeding purposes such weight is more than sufficient to ensure good stock.

"It is seldom that a goose lays till after a year old; and I mention this because beginners are sometimes needlessly alarmed about the fecundity of their stock, from having purchased goslings and found no produce from them the first year. The eggs of the Embden Geese are white in colour, very large, and rough in the shell, which is extremely thick. It is customary here to set the eggs under large Cochin or Dorking hens, which can well cover and take care of three or four of them; and it is very rarely regular goose breeders allow the geese themselves to sit. A turkey-hen also makes a capital mother. The eggs should be well and regularly sprinkled with lukewarm water, to prevent the shell becoming so hard as to check the egress of the young. Geese sometimes lay two sittings of eggs in a season, but this is decidedly an exception to the rule. The period of incubation is thirty days.

"The young are easily reared on the same food as ducklings, but they want green food as well, for which I strongly recommend young green onions, as also what are called clivers or burrs, pulled from the hedgerows, of which goslings are particularly fond. When once fully fledged the goslings will thrive well with no other food than they can find, grazing the fields or orchards till November, when the keep gets short. If they are then shut up for a few weeks, and fed on meal and some oats, they will quickly fatten to great weight, and come in excellently for Christmas, when they sell at great prices in London and other markets.

"Another source of the profit derived from geese is the soft down on the breasts, which is sold at a good price. In many places where numbers of geese are kept, the down is plucked from the living birds at various seasons of the year; but this practice, though profitable, must give a great deal of pain to the goose, and should be strongly condemned.

"A large extent of water is not at all necessary for geese; they can do very well with only a large tub to bathe themselves in, but of course to look well the pure White Embden Goose requires a large pond or brook."

TOULOUSE GEESE.—"The Toulouse Geese take their name, rightly or wrongly, from the important city in Southern France, where they are at least largely reared. They do not, perhaps, stand quite so tall as the Embdens, but are more compact in shape, whence they are by many preferred to them. They are light grey on their bodies and breasts; the neck dark grey, which shades off rather lighter towards the back, and the wings are of the same colour, shading off again lighter to the belly, where it becomes gradually white. The bill I can only describe as the colour of sunburnt flesh, and the feet are a deep reddish orange.

"In weight the Toulouse have generally surpassed the white geese; but in 1872 my Embdens stood first in this respect at the Birmingham Exhibition, where *weight* is supposed to gain the day;

whilst, on the other hand, my Toulouse took first honours at the great London Show, where the birds are not taken from their pens, but judged more on the merits of their good looks, condition, and symmetry, and the two breeds compete in one open class. Before Birmingham Show my old Toulouse Geese that won first prize weighed fifty-four and a half pounds the pair, and the goslings forty-eight and a half pounds the pair, which showed a falling off on the former and a slight gain on the latter as compared with the previous year, when the weights of my old birds at the show itself were, old birds sixty pounds, and goslings forty-seven pounds. This weight for a pair is believed to be the heaviest ever attained at any exhibition. I account for the decrease in weight since the previous year by the fact of having in the interim lost my finest old gander, which, just previous to departing this life, had weighed no less than thirty-eight pounds.

"Some time ago I bought for a change of blood a fine gander from a celebrated fancier, which differed from my own strain in colour, being of a beautiful *silver-grey* instead of dark like my own, though otherwise the markings were exactly similar. I bred from him that year some splendid stock, which all took after their maternal relatives in colour with one exception, consisting of a gander, which came of exactly the same hue as his sire. Since that time, in each succeeding year, I find one or two—seldom more—come silver-grey; and strange to say, they are always *ganders*, and generally remarkably fine, and superior to their brothers. I have never yet bred a single goose of this lighter shade.

"Nothing as to the treatment and feeding of Toulouse Geese need be added to what I have already said on the rearing of the Embden variety. But I may add that there is one particular use to which the Toulouse Geese are put, as it is to this variety exclusively the fashionable world owe that favourite delicacy of the luncheon and supper-table, the famous Perigord pies, or *paté de foie gras*. For this purpose the geese are shut up in a very hot chamber, and there fed well. They are so kept until their livers swell to an enormous size, when they are killed, and the diseased organs being taken from them are potted with truffles, and the epicurean dish of *foie gras aux truffes* is thus made.

"I cannot help here noticing the very poor encouragement held out to breeders of geese by most of our poultry societies, many of which seem to almost ignore their existence, or if they do deign to give them a place in the prize sheet, the amount offered as a premium is usually so small that the exhibitor does not care to send his heavy and valuable specimens, at great cost for carriage, for the chance of gaining a sum so paltry, that when fees, carriage, &c., are paid, the balance stands on the wrong side, even if the birds are successful. Surely these useful birds are deserving of more attention than they get, when we look to their advantages of size, and other qualities which render them pre-eminently important as an article of food for the people.

"The number of breeding-stock for geese is stated by Mrs. Blair to be one male to four females; but my experience has caused me to rather differ from this, and I should advise not more than two geese to be put to one gander. And I would also say, that though I would always recommend a pure breed to any one, still I am aware that a cross between the two sorts produces *first-rate* birds for table purposes only.

"It is well-known that geese are excellent *guards* to a poultry-yard; for should any intruder come to the pens at night from evil (or any other) motives, or should a fox be prowling about, their clamour is sure to arouse the poultry-man, giving timely warning that something is amiss. We cannot but remember that it was to this quality Rome owed its preservation from the onslaught of the Gauls, the cackling of some geese confined in the Capitol putting the Romans on their guard in time to repulse the attack of the invaders; for which good service the geese of the Capitol were declared to be sacred, and ever afterwards treated with profound respect. No goose-

breeder would at all doubt this story, his own experience corroborating it in every essential point." Mrs. Seamons, formerly so celebrated as an exhibitor, has kindly added the following notes on the breeding and rearing of geese :—

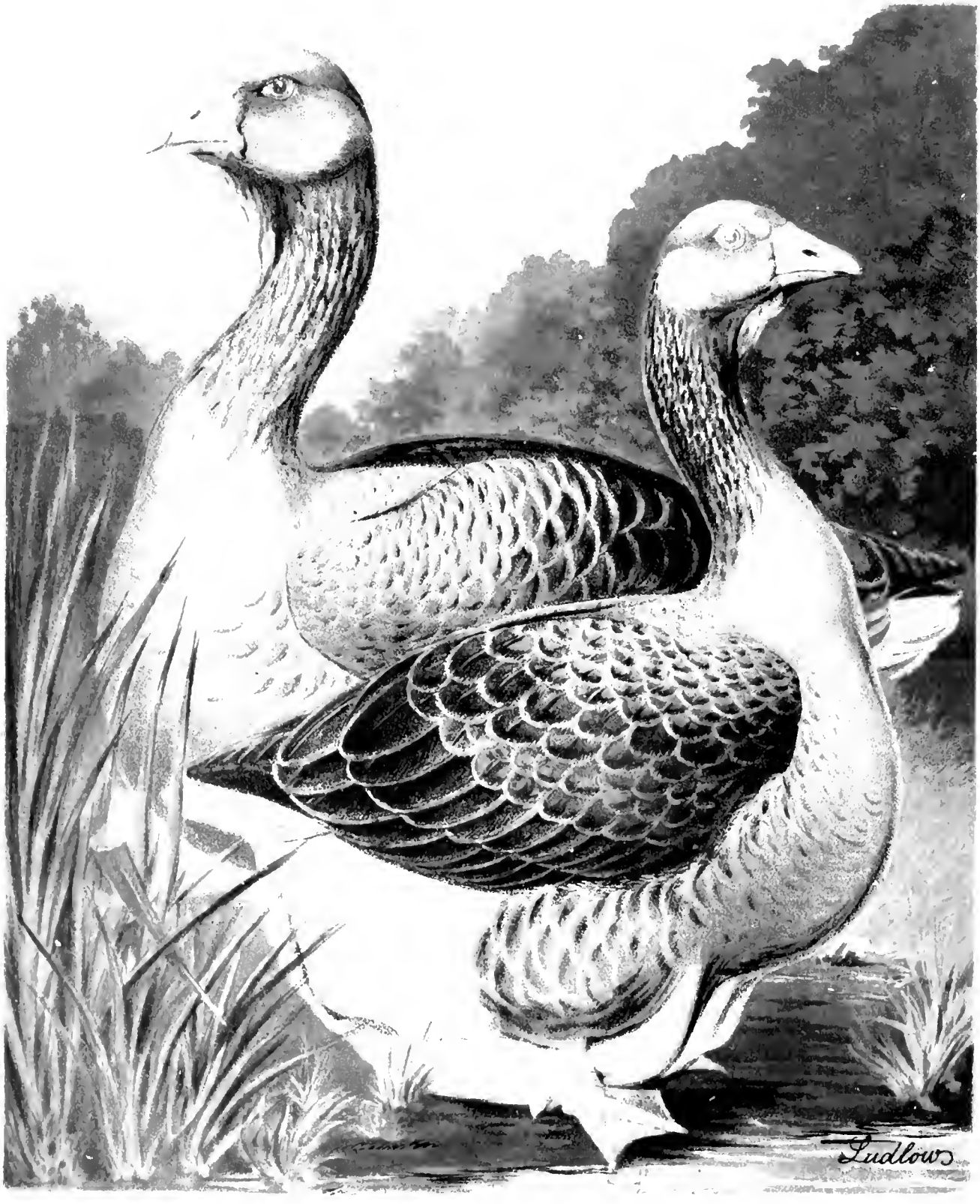
"Geese require little trouble or expense, as they will support themselves roaming about the fields. They generally commence laying about February, and will lay from thirteen to fifteen eggs each, when they will feather the nest for sitting. After the goose has sat a day or two thirteen eggs only should be put under her, that quantity being quite as many as she can cover. Thirty days is the usual time a goose will sit, but if the weather is very hot she will hatch a day or two earlier. Keep the goslings warm, and well fed, at first with hard-boiled egg, bread-crumbs, and weed; and when strong let them out on a good grass-run, with the goose under a coop, or she would lead them too far away. They grow very fast, and will require very little feeding or care after they take to the fields, a great many every year being killed at Michaelmas just as they are taken out of the fields, and hence called "green geese." Those which are kept on for Christmas will, however, require feeding for about six weeks, which should be done in rather a dark place, where they are kept very quiet. I have always fed on the best barley-meal with a little whole barley put in the water, and have thus made some splendid birds; in fact, my geese were always sought after as very superior, and few could beat my exhibition specimens in weight. The heaviest single bird I ever had weighed thirty-six pounds, and gained many prizes; and a pair of Toulouse weighed sixty pounds by the scales of the judges at Darlington, after travelling the long distance from Aylesbury. My exhibition birds were always fed the same as the others, only were not allowed to run out so much, or to sit, as this quite spoils the plumage for exhibition.

"Toulouse Geese are not good sitters, and their eggs are generally set under hens; but these must be large and heavy, or they do not do well."

The goose, when set upon her own eggs, will not brook much interference, nor is such necessary, as she is almost invariably (except the Toulouse, which has already been stated to sit badly) a patient and steady mother. When leaving the nest, she covers her eggs like the duck, though not so perfectly. Neither is it needful to take any precautions with the gander, who takes the greatest interest in the process of incubation, and if the sitter happens to be his favourite mate, will often go and sit by her for an hour or more. We say if it be his favourite wife, because the wild goose is monogamous; and though the domestic bird will mate with three, four, and even more wives, there is generally a marked favourite among them. The best ready-made coop for a goose is one of the large square crates used for packing earthenware; but as soon as the goslings are strong, if the grass-run be good and not too large, it is as well to turn all loose, when the gander will protect them, and assist in bringing up the family. If from any cause, such as bad weather, they cannot be put out when hatched, plenty of fresh turf must be provided daily, grass being the natural food of the goose, without which it cannot thrive.

The goose lives, lays, and produces strong and healthy progeny to a very advanced age, many cases being recorded of birds being in full breeding to at least forty years old. Whether the ganders would remain equally vigorous is somewhat uncertain, as their temper generally becomes very bad at a comparatively early period, when their great power (the blow of a gander's wing has been known to break a man's leg) makes it by no means safe to keep them, especially if there are many children about. There are exceptions, no doubt; but bad temper in an old gander is certainly the rule, as we have divers most vivid recollections of in our childish days.

In olden times, when the commons then so abundant really belonged to the people around them, instead of being enclosed by rapacious landowners in the neighbourhood, vast flocks of geese were kept. Wiltshire was then a great goose-rearing county, each flock on a common having its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owner's mark punched in the web between the toes, and being attended by a "gozzard" or goose-herd, who drove them home at night and locked them up in their proper domicile. This trade is now greatly circumscribed, though still carried on to some extent, particularly in Surrey, and we believe in Lincolnshire. Most of these geese are plucked alive several times a year; and we may here remark that the feathers of the Embden are much more valuable than those of the Toulouse or other grey geese, which gives the breed a higher value in this respect. It is not only that white feathers are always most valuable in the market, but the Embden feathers are also found to "curl" better, and the skins of the geese themselves, after being plucked, "positively for the last time only," are whiter or clearer in appearance, which sometimes finds the birds a more ready sale.

It is however in Norfolk and Suffolk that the goose trade is now carried on upon the largest scale; and a few particulars of its organisation and management may accordingly be acceptable. Such we accordingly extract from a paper by Mr. Henry H. Dixon, in the "Journal of the Royal Agricultural Society of England."

"The goose trade of the great Norfolk dealers resolves itself into two branches—the green geese, and the Michaelmas. In March and April they begin to get in their gosling supplies from farmers or cottagers near the commons in both those counties. Most of these goslings are about five weeks old, and many of them in very poor plight; but six or seven weeks of feeding under stages, on barley-meal, maize, wheat-tailings, and brewers' grains mixed, make them all ripe for the green goose market. The Michaelmas geese take their places under the stages in August, and Norfolk and Suffolk are pretty well scoured before the dealers fall back upon the Irish and the Dutch supplies. The Dutch, which are principally grey, come from Rotterdam, and one of the largest Norwich dealers imported seventeen tons' weight of live birds last year. They come over by steamers and sailing vessels, packed in big flat baskets, but not to any great extent after the 1st of October. In the dealers' hands they are fed on the same principle as ducks—low fare to begin with, and then on a gradually ascending scale. On turnips they are capital substitutes for sheep, and when a dealer has a turnip field, he not unfrequently hurdles off a portion of it and eats it off with them. They first clear the tops and then the bulbs of the softer turnips; but when they have a field of Swedes to deal with, the man in attendance gives each turnip a chop. With this aid they eat far cleaner than sheep, and, in fact, leave nothing but their "taith," which answers admirably as a preparation for the next wheat crop. Mangels are not so much to their taste as turnips, but they eat the tops with a special relish. While they are busy with these green crops they require nothing but large troughs of water; and the finishing process consists in putting them under stages for a month, and feeding them on brewers' grains and meal.

"On the western moors of Cornwall every one keeps geese, and they are bought up by jobbers in thousands for the stubbles. Summer Court, on September 25th, is the goose fair of the county; but they are only eaten there, and bargains are struck under their savoury influence for draft ewes and wethers. Farmers all over England are supplied very largely both from Holland and Ireland. Geese are extensively bred in Moravia; and the hilly districts in Germany and Holland are peopled by a lot of goose farmers, who get their living entirely by them. The Hussenheim goose market is a very large one, and of great antiquity; and, according to local tradition, the town owes its name to the bird of its choice. The Dutch hucksters buy goslings from the cotters—who, like the burghers, are remarkable for turning the penny the right way—at prices varying from one shilling and sixpence to two shillings. They are driven to Rotterdam, where they are packed up in crates, which are capable of holding about fifty or sixty each. Their voyage to Hull by the steamers is charged at eighteen shillings per hundredweight, or about £5 for 300 or 400 birds; and they are

not fed until they are landed, and then with oats. From Hull they are forwarded to central market towns in railway trucks, each of which is capable of holding 230 birds. A small per-centage of the more weakly ones die from being trampled on; and these casualties, with the expense of transit and sale attendants, bring up the price to about three shillings and ninepence, when they are pitched in the market during August and September. The Irish collections are managed on a similar principle. If the goslings are purchased within reasonable distance of Dublin or Dundalk they are driven to those ports, and if not, they are sent by rail. Liverpool, like Hull, is quite a 'board of supply' for English dealers during the season."

Little more can be said regarding the management of the domestic goose. We have already remarked that the large size and strength of the bird make interference out of place during incubation, such being almost certain to endanger the offspring; and the important part played by simple grazing in the diet, with the hardy character of the young, make any minute directions equally needless for rearing. Give them the very few essentials described, and they can hardly go wrong; though we must add, that we would *always* supplement the grass feed by a handful or two of corn at night, when they are, of course, shut up in a house or pen for safety. In choosing stock for breeding, most good breeders select the longest-bodied birds, such being found by experience to produce the largest and heaviest offspring. As in the case of turkeys, very much depends upon keeping up and breeding from a large, fine, matured stock. With regard, however, to producing birds for market purposes solely, we would direct special attention to the following remarks by Mr. Hewitt, which will sufficiently exhaust the subject of geese considered as market poultry:—

"It will be pretty generally admitted that, with the exception of some few breeds of highly-plumaged foreign and two or three varieties of native wild geese, all other geese are usually kept more with the view of profit than as being strictly ornamental. It may therefore here benefit others to make a few suggestions, the result of experience gained long prior to poultry-shows being in vogue, and when the matter of breeding geese was pursued simply from rivalry and its utility. I am convinced beyond question, after many trials, that the finest geese are those procurable from a 'cross' between the Embden and Toulouse; and I much prefer the whole of the *geese* to be thorough-bred Embdens, and the *gander* an equally pure Toulouse.

"By this first cross birds of great frame are procurable, and, under constant high feeding, of weights very far beyond those of either of the parents producing them. I have as a rule, between Michaelmas and Christmas, killed birds of the same year thus bred, the geese being from seventeen to twenty pounds each, and the ganders from twenty-two to twenty-six pounds. It must be kept in mind such goslings were *not* excessively fatted, as the weights might suggest to some persons, but rather like Shropshire sheep, more remarkable for the immense quantity of flesh they carried than their obesity. The flavour of these cross-breds is remarkably mild and fine. These first-cross goslings must, however, *not* be retained as future *stock* birds, for they themselves produce young of very inferior size, by throwing back.

"Geese are prolific for numbers of years; and I believe ganders would prove equally so, were it not that their irritable temper, as age creeps on, generally compels their owners 'to do away with the old gander,' as having become an intolerable nuisance, more especially when teased whilst young. This obstacle, however, is of little moment; the rule to be observed is, breed continuously (year after year) from the *same* old stock, which are purely descended, and kill off annually *all* the cross produce for table or market purposes. If the old birds are truly bred of their respective kinds, the goslings almost without exception will be 'saddle-backed' in the feather, with the head and *upper* portion of the neck grey, and a patch of the same colour on the thighs, the whole of the remainder of the plumage being white. Singularly enough, the majority of the young ganders

and a fair proportion of the geese thus bred are slightly crested, though this peculiarity is not possessed by either parent.

"It will be found much preferable for the gander to be a Toulouse and the geese Embdens than reversing the sexes, as they breed larger-framed and *heavier-fleshed* birds, which is a most important feature. It also affords some amusement to the owner, as it altogether upsets at once the theory of many old farm-mistresses, that the gander is the white bird and the geese particoloured.

"It may not in this place be amiss to make a suggestion on feeding. If kept in a quiet, partially-darkened place, barley-meal mixed with brewers' grains fattens them very rapidly; and they will more quickly become reconciled to their new position if a little sweet hay is fastened up tightly for them to nibble at, but carefully arranged so as not to get trampled under foot. To make the best of such geese, however, they must be well-treated from the first, as they when thus managed, out of the same gross weight, produce more flesh and a less superabundance of 'goose-oil' than when very suddenly fattened; indeed, this is the case with all water-fowl.

"The only object I had in view many years back, when rearing such geese by the aid of some tenants, to whom I supplied the old birds, was simply to enjoy the satisfaction of possessing at Christmas birds unequalled in their weight, for the supply of myself and some few valued friends; the remainder being sold to repay the persons who raised them. It is really surprising at such festive occasions how much money may be obtained for any *out-of-the-way* superior specimen of this covetable viand of the working man. At these times the well-to-do artisan is anxious for the finest on sale—'Give me the best, price is no object; I want the best out,' is no unusual remark from such buyers, in our densely-populated districts. I was once present in a poulterer's shop when one of these geese was sold to a working man's wife for thirty shillings. It was dressed but *not* drawn, and weighed twenty-six pounds, though equal in colour and fineness of skin to the most medium-sized goose on the premises. At these merry times unusually large well-managed geese always fetch what would appear to be really fabulous prices, and what is more, they are always first to change hands."

These practical remarks are also valuable as showing the great utility of pure races, even when cross-bred birds are found preferable for immediate market purposes; for without such pure races these valuable crosses cannot be had; while it is also seen that the produce of cross-bred birds rapidly deteriorates. We have discussed the subject before; but this additional proof of the truth of what we have said, drawn from birds bred for such peculiarly commercial purposes as geese, is especially valuable.

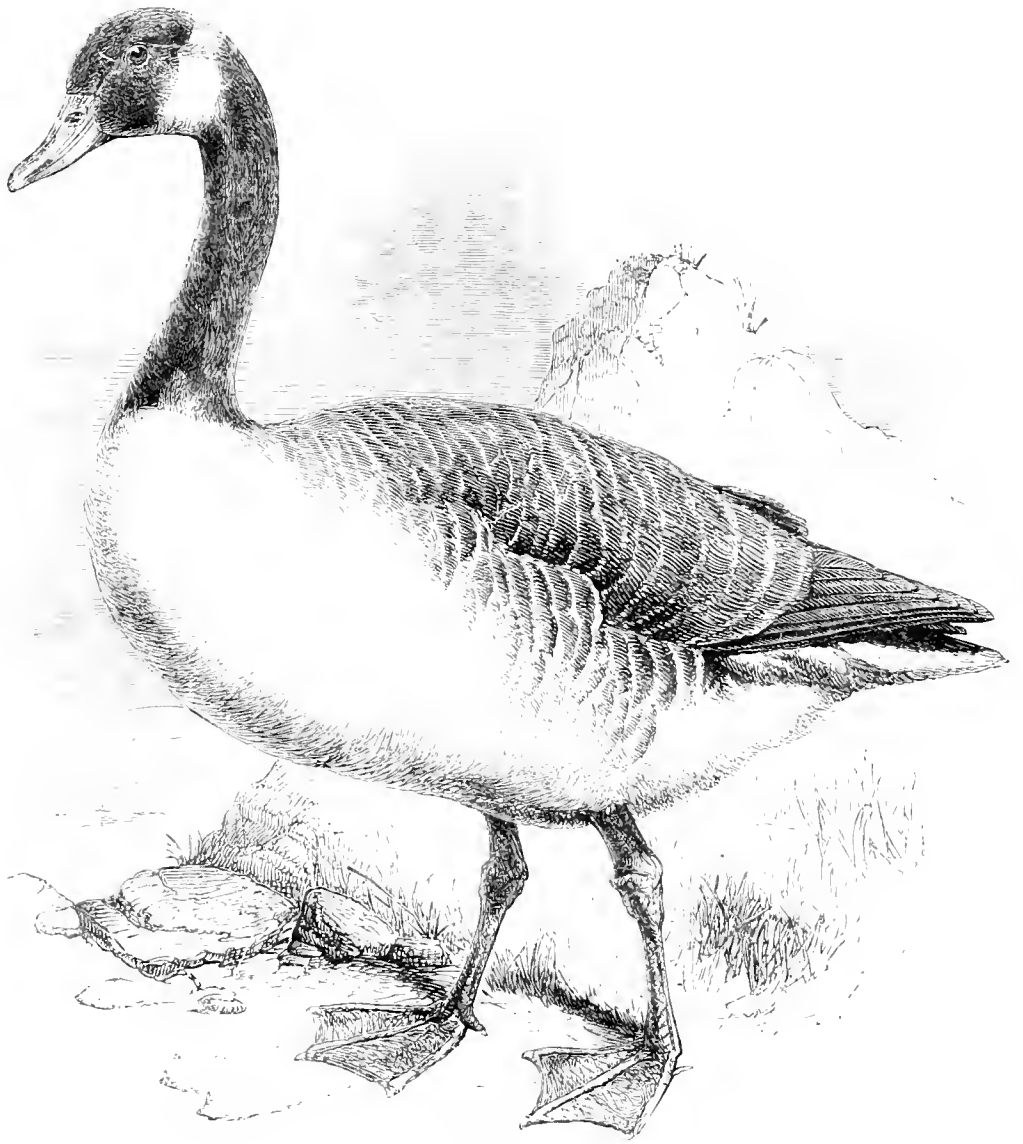
THE CANADA GOOSE.—Besides the ordinary domestic breeds of geese, there are several others deserving notice, some of which have been domesticated, and all of which are often seen at poultry-shows. The first of these is the well-known Canada Goose, or aboriginal goose of North America.

The most obvious peculiarity of this beautiful bird is the long and slender neck, which gives it an appearance midway between that of the goose and the swan. Hence naturalists have given it the name of the *Cygnopsis Canadensis*. Buffon states that at Versailles a number of domesticated Canada Geese bred familiarly with the swans kept there, and the fact is very probable; but the real affinities of the bird are certainly with the *Anseres*, or goose family.

The head, bill, and greater part of the neck of the Canada Goose are black, with a white "cravat" at the throat, which gives it rather a peculiar appearance. The feathers on the upper part of the body are a brownish grey, with light edges. The dark upper plumage passes though grey

to nearly white on the belly; and the wing-quills and tail are almost black. The eye is greyish brown, and the legs and feet blackish grey, or almost black. The legs are rather long, and the carriage noble and commanding. On the water the swan-like outline is very conspicuous.

The common English breeds are by no means uncommon in the United States, but the Canada Goose is generally said to do much better. It is not such a continuous grazer as the



THE CANADA GOOSE.

English Goose, being more fond of marshes and aquatic plants. The flesh is excellent, and the breed most easily domesticated, while the management need not differ from that of other kinds. As an ornamental water-fowl it has long been kept in many places, but there appears no reason whatever why it should not be regarded as part of the regular stock of the farm-yard. There are, perhaps, hardly enough data to warrant such a conclusion; but we have heard it stated by good authorities that the Canada Goose, after a little breeding in confinement, is found to produce much more delicate flesh than either of the common breeds, and at least as economically so far as

regards food—some think more so. As the rich and somewhat gross character of the flesh of geese is an objection to many persons, the Canada Goose may be recommended to all such as well worth a trial.

If the wide distribution of the Grey-lag and Bean Goose is remarkable, that of the Canada Goose is almost equally so. It has often been shot in Britain, proving its powers of flight to be very great. In Cambridgeshire large flocks have been seen; and in the more northern parts of England small colonies have been known to settle and to breed. In sagacity and courage the gander appears to surpass the common goose, though even this bird is the very opposite in character to the reputation it popularly bears, being pre-eminent among the poultry tribes for both intelligence, and faithful courage in defending his family. Audubon gives various instances of similar qualities in the Canada Goose. "I knew a male," he says, "that appeared larger than usual, and of which all the lower parts were of a rich cream-colour. It returned three years in succession to a large pond a few miles from the mouth of the Green River, in Kentucky, and whenever I visited the nest it seemed to look upon me with utter contempt. It would stand in a stately attitude until it reached within a few yards of the nest, when, suddenly lowering its head and shaking it, as if it were dislocated from the neck, it would open its wings and launch into the air, flying directly at me. So daring was this fine fellow, that in two instances he struck me a blow with one of his wings on the right arm, which for an instant I thought was broken. I observed that immediately after such an effort to defend his nest and mate, he would run swiftly towards them, pass his head and neck several times over and around the female, and again assume his attitude of defiance. Should danger be imminent, the brave gander urges his mate to fly off, and resolutely remains near the nest till he is assured of her safety, when he betakes himself to flight, mocking as it were by his notes his disappointed enemy."

As an instance of the creature's sagacity take the following, also from Audubon:—"They are able to distinguish the different sounds or footsteps of their foes with astonishing accuracy. Thus, the breaking of a stick by a deer is distinguished from the same accident occasioned by a man. If a dozen large turtles drop into the water, making a great noise in their fall, or if the same effect has been produced by an alligator, the wild [Canada] goose pays no regard to it; but however faint and distant may be the sound of an Indian's paddle that may by accident have struck the side of his canoe, it is at once marked; every individual raises its head, and looks intently towards the place from which the noise has proceeded; and in silence all watch the movements of their enemy. I was much surprised one day, while on the coast of Labrador, to see how cunningly one of these birds, which in consequence of the moult was quite unable to fly, managed for awhile to elude our pursuit. It was first perceived at some distance from the shore, when the boat was rowed towards it, and it swam before us with great speed, making directly towards the land; but when we came within a few yards of it, it dived, and nothing could be seen of it for a long time. Every one of the party stood on tip-toe, to mark the spot where it should rise, but all in vain; when the man at the rudder accidentally looked down over the stern, and then saw the goose, its body immersed, the point of its bill alone above water, and its feet busily engaged in propelling it so as to keep pace with the movements of the boat. The sailor attempted to catch it while within a foot or two of him, but with the swiftness of thought it shifted from side to side, fore and aft, until, delighted at having witnessed so much sagacity in a goose, I begged the party to suffer the poor bird to escape."

The Canada Goose has been seen within the Arctic Circle in summer, and even then was winging its way farther north. Captain Phipps found them in Spitzbergen; and through the whole of the Hudson's Bay Territory they form a most important part of the season's food. The

arrival of the flocks is anxiously looked for both by Indians and trappers, and the destruction enormous. While the supply lasted, one goose, which commonly weighed about nine pounds, was usually reckoned as the daily ration of one of the Company's servants, and, according to Dr. Richardson, was considered equal to eight pounds of buffalo or moose meat, or two pounds of "pemmican." In domestication this weight is far exceeded, and it is worth noting that the weight of the wild bird is at least equal to that of the Grey-lag. The cry is said by some naturalists to resemble the syllable "*honc, honc,*" while others call it "*hawk, hawk.*"

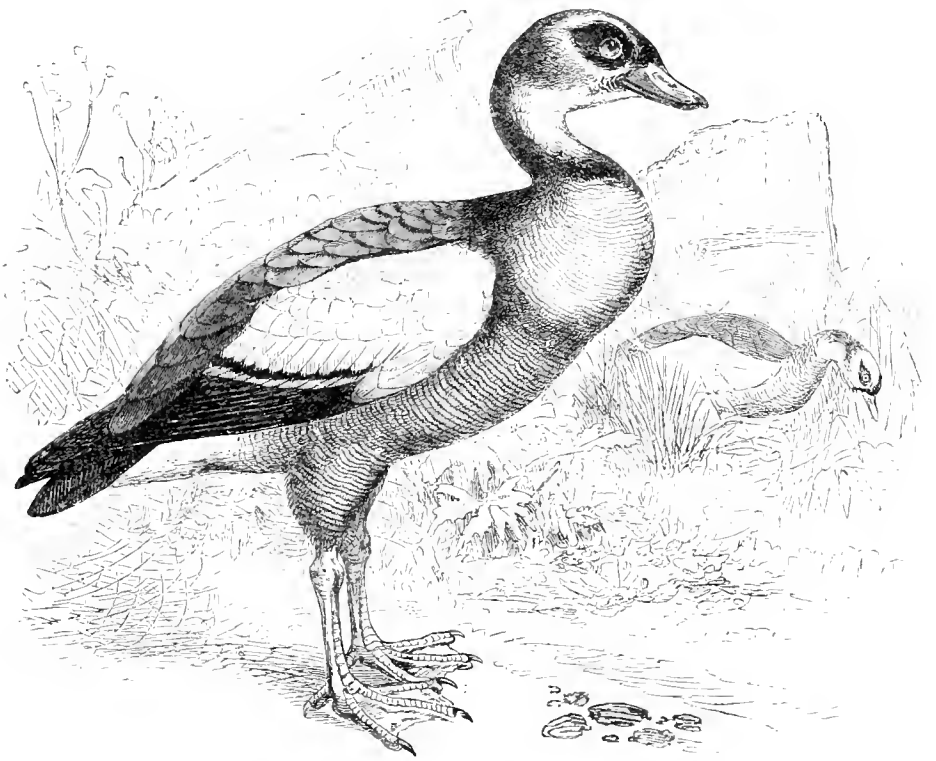
Upon the whole, this variety appears to possess every quality useful in a goose; and it is greatly to be desired that it should be more kept as farm stock, and not merely, as is now the case, among the ornamental water-fowl.

THE CHINESE GOOSE.—This goose (*Anser cygnoides*), called also the Hong-Kong Goose, the Knobbed Goose (from the protuberance at the base of the bill), and even the Spanish Goose, occupies, like the preceding, a somewhat debatable position between the geese and the swans, both the protuberance just mentioned, and its long neck, giving it a somewhat intermediate character. Like the varieties already spoken of, it is very widely distributed, ranging over China, great part of Asia, and it is believed even of Africa. It has been already stated, upon the authority of Mr. Blyth, that the common domestic goose of India is a hybrid between this goose and the Grey-lag, and it is very remarkable that these hybrids appear perfectly prolific, and perpetuate the cross with a little care; not, as is usual with crosses, reverting to either of the parent races. It appears to be domesticated with the utmost facility, and to be as hardy and easily reared as any other variety. Of its extremely ornamental appearance we need say nothing to those who have observed any of the specimens usually to be found in the Zoological Society's collection at Regent's Park. In size it is midway between the common goose and the swan, whence it might probably be bred with care to very great weight; and in one point it has a most decided advantage over all other breeds of geese—viz., in prolificacy. While other geese lay rarely over fifteen eggs, and as a rule once a year, though some will lay twice, the Chinese Goose usually lays about thirty eggs before desiring to sit, and will lay three or even four litters in one season. The eggs are not so large as those of the common goose, not exceeding about two-thirds of the size; but this still leaves a great deal to the credit of the Chinese; and as in other respects—such as size, aptitude to fatten, and ease of management—it appears in no respect inferior, while the quality of flesh is, if anything, decidedly superior, it is surprising to us that this beautiful breed has not long since been widely distributed amongst farmers and goose-breeders. The cry is harsh and peculiar when hungry, and the bird is said to be fond of swimming at night; but both these failings are very easily remedied by giving a feed of corn the last thing, and then shutting them up till morning.

This goose is found to vary somewhat in colour. The most usual colour, perhaps, is a greyish brown on the back and upper parts, passing to white or whitish grey on the abdomen; fore part of the neck and breast a yellowish grey, and a very dark brown stripe running down the entire back of the neck from the head to the back. The bill and legs are orange in this variety, and the protuberance at the base of the upper bill dark or almost black. Other birds are white, all but a pale stripe down the back of the neck; this peculiar stripe appearing to characterise all colours in the pure Chinese Goose. And we have seen specimens in which the bill and legs were black; but the purity of these is not, perhaps, quite certain. Another distinguishing character of the Chinese Goose is a dewlap, or kind of feathered wattle under the throat.

THE EGYPTIAN GOOSE, also called the Nile Goose (*Chenalopex Ægyptiacus*) is a most

beautiful bird, and is often seen at shows wherever a class for "any other variety" of geese gives it an opening. It is perhaps the most ornamental of all the geese, its tall and somewhat slender form giving it an elegance of appearance no other variety can boast of; and it has the merit, not very common in ornamental water-fowl, of breeding pretty freely in confinement. Notwithstanding these advantages, it has one great drawback; the truth must be told, that the male at least is a most quarrelsome bird. With other males of the same species he will fight to the death, and is generally a dreadful tyrant and persecutor even to other inmates of the pond. Some individuals, however, manifest somewhat better morals, and it is possible that more perfect domestication might modify this inconvenient disposition.



EGYPTIAN OR NILE GOOSE.

The general colour of the Egyptian Goose is grey and black upon the upper parts of the body, and pale buff or yellow, beautifully pencilled with black lines underneath; a patch round the eye and another on the centre of the breast being of a chestnut colour; the shoulders of the wings white, with a narrow black stripe or bar of beautiful metallic lustre; and the wing-quills and tail-feathers glossy black. The eye is orange-colour, the bill purple or bluish red; the feet and legs reddish yellow. The wings of this goose, like those of the Gambian or Spur-winged Goose, have on the bend of the wing or wrist-joint a strong white horny spur about five-eighths of an inch long, instead of the hard knob which belongs to most of the goose tribe. The female closely resembles the male, but is somewhat smaller. The number of eggs varies from six to twelve, more than six being rarely obtained in captivity, though ten or twelve is believed to be the usual number laid by the wild bird.

The Egyptian Goose, like the other principal tribes, has a wide range. It is known to extend from Alexandria to the Cape of Good Hope, and has been frequently shot in England. In some

cases, no doubt, such specimens may have been escaped birds from parks or menageries; but this could hardly be the case with a flock of nine seen at the Isle of Man in 1838, and another flock, estimated at no less than eighty, seen in Hampshire, after a tremendous gale. In the southern parts of Europe it is common enough, no doubt crossing the Mediterranean from Africa, its native home. Its place in history is well marked—perhaps more so than that of any other variety. It is clearly alluded to by Aristotle, Aristophanes, Athenæus, and other writers; and Herodotus makes special mention of it among the sacred birds of Egypt; while Mr. Salt states that wherever the goose is represented on the walls of temples, this variety is clearly recognisable.

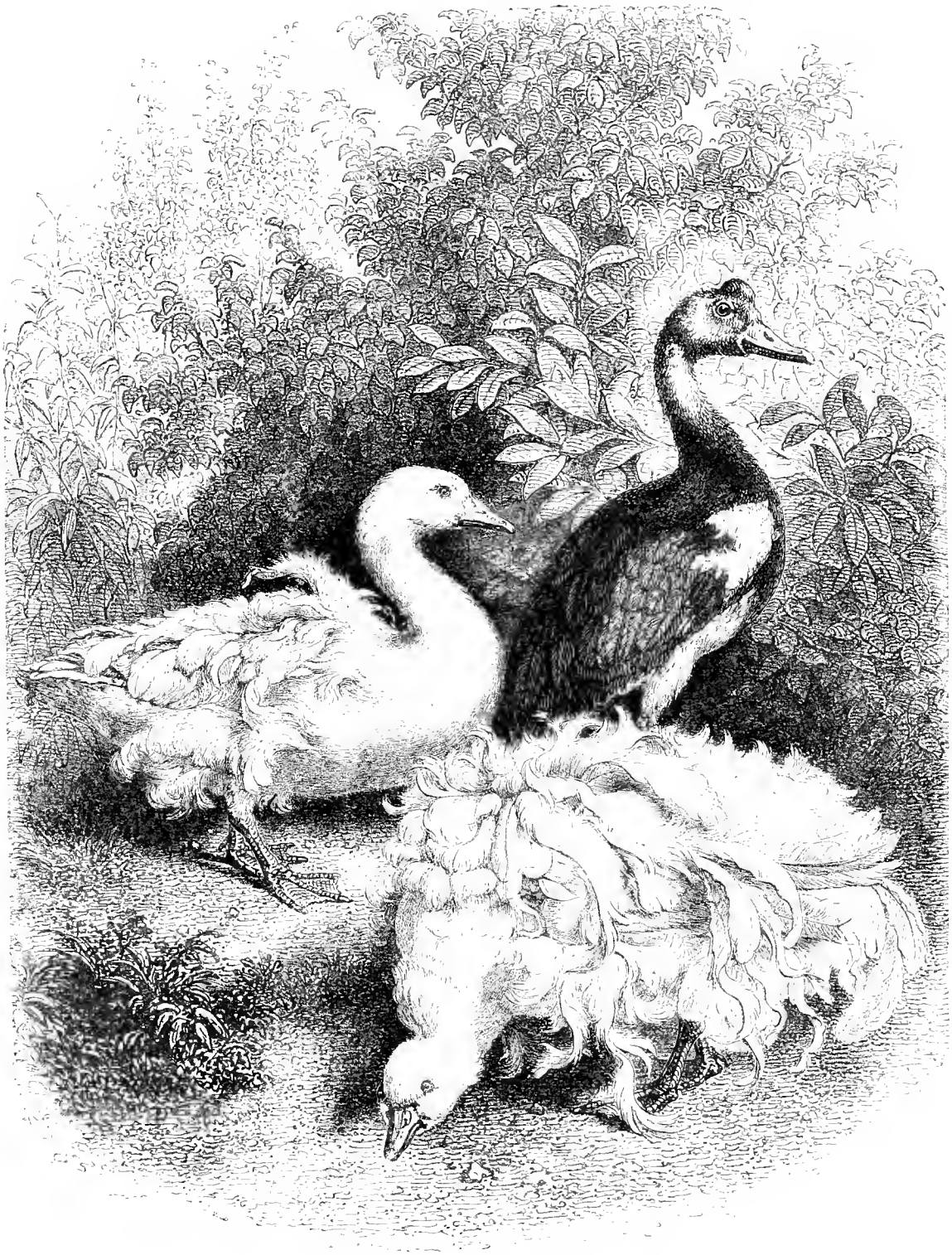
In the Regent's Park Gardens, in 1838, Mr. Yarrell states, a female Egyptian Goose paired with a male of the Penguin variety of ducks, and the eggs were fertile. This occurred during two successive seasons. The Penguin being a mere artificial variety of the common duck, this would appear to give the Nile Goose a somewhat intermediate position between the duck and goose tribes, and its affinity to the Shieldrakes is indeed evident to any observer.

THE GAMBIAN GOOSE, called also the Spur-winged Goose (*Plectropterus Gambensis*), has been rarely seen at shows. Like the Nile Goose, it has a spur instead of a knob on the wrist-joint of the wing, but in this bird the spur is more developed and very powerful. The beak has at the base a large excrescence, as in the Swans or Chinese Goose, and the toes are somewhat long. The plumage is black and white; the cheeks, throat, under parts, and shoulders of wing being generally white, and other parts bright green black. The eyes are reddish brown, the bill and legs dull red. The carriage is very upright and tall. This goose is shy in confinement, but has been known to breed.

THE SEBASTOPOL GOOSE.—This singular variety appears to be not uncommon on the Danube, and has been called the Danubian Goose, though generally known by the name first mentioned. It appears to be a variety of the common goose, breeding freely with it, and the progeny being perfectly fertile; the shape also resembling it, and the sole peculiarity being in the plumage, which somewhat resembles in character that of the Frizzled Fowl. Mr. Fowler makes the following remarks upon this breed:—

"They are of the same colour as the Embdens, pure white; their peculiarity being that their feathers appear to grow the wrong way, and from the tail and saddle they have long trailing feathers, beautifully curved like the sickle-feathers of a Dorking cock, but so thin in the quill that the least breeze blows them about. Altogether they are most curious in appearance, and they once brought forth from an American friend the remark that 'they must surely have been hatched in a gale of wind.' They seem to be rare in this country, though they certainly deserve more attention, being a very great addition to our ornamental varieties of water-fowl."

We have already compared the plumage of Sebastopol Geese to that of the Frizzled Fowl; and it will be noticed as a curious coincidence, that both alike have been described—one by Mr. Tollemache and the other by Mr. Fowler—as resembling birds ruffled by a gale of wind. But on closer examination the comparison only partially holds; for while the feathers of the frizzled birds have considerable strength, and are as a rule properly webbed, those of the Sebastopol Geese are very weak, and partially destitute of adhesion in the barbules, thus resembling in a considerable degree those of the Silky Fowl, and being, in fact, midway in character between the Silky and the Frizzled. There is, however, a special peculiarity in these feathers, as already quoted from Mr. Darwin at page 407, in that the stems of the feathers are in many places themselves split up into narrow filaments, which are furnished with barbules, and for the time resemble, therefore, the barbs



SEBASTOPOL AND GAMBIAN GEESE.

rather than the stem. Farther up these barbs often unite again to form a proper stem, thus presenting a variation from the normal type of stem precisely opposite in character to that of the Sonnerat Jungle Fowl.

The engraving represents a beautiful pair of Sebastopol Geese kept some years ago in the gardens of the Acclimatisation Society at Paris. The third is a Gambian or Spur-winged Goose.

The average weight of Sebastopol Geese is about ten pounds each. The first specimens were imported from the Black Sea, whence the name is perfectly appropriate. They breed freely with common geese, the progeny generally showing the peculiar plumage in a modified or inferior degree. It is worth notice, as showing the analogous character of the plumage to that of Frizzled Fowls, that in some specimens the feathers on the neck also are actually recurved, though this is not usually the case.

THE CEREOPSIS GOOSE, a native of New Holland, is a handsome bird; but the gander is even worse in temper than the Egyptian, which makes it almost impossible to keep this variety in company with any other water-fowl.

JUDGING GEESE.—Our attempts to frame a scale for judging geese from the awards at various shows, have produced very similar results to those in the case of ducks. With regard to Birmingham and most other shows, it is practically *weight* which decides the prizes. It is quite true that Embden Geese with coloured feathers, or birds grievously out of condition, would be disqualified either nominally or practically; but there are always birds so free from such faults as these, that the rule practically holds good. And at other shows, where the scales are not employed, but general appearance, symmetry, &c., are taken into consideration, still no rules can be given, but the awards must be left to the "general impression" formed by an intelligent judge. The competition is not enough for reliable scales to be formed, and we have throughout this work stedfastly refused to present any tables which should give simply our own views, empirical as these or any other "views" must necessarily be. We will only state that comparison of the awards at all the Crystal Palace Shows, at which the competition has been the keenest of any where geese are thus judged as a whole, proves that size (measured by the eye) on the one hand, and the points of colour, plumage, symmetry, and condition taken together on the other, are given as nearly as possible equal weight in judging; from other shows we have found it quite impossible to obtain any reliable average; but the above may probably be taken as a rule embodying as much of accuracy as the case is capable of. In judging "fancy" geese, it is impossible to give any rule at all, cases where these are shown being so comparatively rare.

CHAPTER XXXVII.

SWANS

THE Swans, like the Wild Geese and Ducks, have a very wide range, being found in all but actually equatorial regions. Two species at least are common to both Europe and America, besides others more local in their character; but Australia, as might have been expected from its isolated position, has a well-marked species of its own. Every race (we believe without exception) is naturally migratory in its habits, though many individuals will remain, especially in the more temperate regions, in the same localities throughout the year, only taking short flights to and fro. In emigration they assume more or less constantly the V-shaped phalanx, which thus seems common to all the aquatic birds. Their powers of flight are considerable when once fairly raised in the air, but the rising appears to be difficult and awkward. They almost always, if not invariably, rise from the water, striking down with both wings and feet, and thus proceeding, half flying and half splashing, for some twenty or thirty yards before they can fairly raise themselves; after which, however, they frequently attain a great height, Franklin stating that he has seen them in the Polar regions several thousand feet above the earth. They always descend also into the water, approaching it in a slanting direction, and stretching out their broad webbed feet to check their speed at the moment they enter the familiar element.

Swans generally pair for life, their whole behaviour offering a beautiful example of conjugal fidelity. The two birds show the greatest affection for each other, always swimming in company, and caressing one another with their bills and necks in the most interesting manner; and should either be attacked, the other will show fight in the most vigorous manner, though, of course, the male is the most powerful and courageous. Both birds help to prepare the nest, the male chiefly gathering the materials, while the female seems to take the chief part in the actual construction. A swan's nest is an enormous affair, being built up of a large mass of coarse water-plants as a foundation, which is lined with finer grasses. In this six to nine eggs are generally laid, which are, of course, very thick in the shell, and generally of a dirty white colour, sometimes dirty pale green. The time of incubation has been differently stated, but we believe Bechstein to be right in fixing it at thirty-five days, though some have said forty-two. The young when hatched are very thickly covered with down, and are generally taken to the water by the mother when only a day or two old. There they are watched over by both parents with the greatest care until grown enough to provide for themselves.

A brief description of the principal varieties of swans will be sufficient.

THE MUTE SWAN.—This species (*Cygnus olor*) is that so well-known upon our lakes and other waters as an ornamental bird, and is a native of Northern Asia and Europe. It is at once the largest and most graceful in outlines of all the swans, the neck being very long and slender. The bill of this swan is red, and the large protuberance at the base black; the eye brown, the legs and feet brownish or blackish-grey, and the plumage all over a pure and spotless white. Its voice

is very soft and low, with a somewhat pleasing melancholy tone about it; but it is not mute, as the name would imply. The cygnets when hatched and for a good while after are grey, and may often be seen on the back of one of the parents when swimming in the water. The flesh is excellent when moderately young, and was formerly highly esteemed; it would probably be so still but for its rarity.

This swan flies very rapidly. Mr. Lloyd writes on this point: "The swan, when migrating, with a moderate wind in its favour, and mounted high in the air, travels at the rate of one hundred miles or more an hour. I have often timed the flight of the goose, and found one mile a minute a common rapidity; and when the two birds, in a change of feeding ground, have been flying near each other, the swan invariably passed with nearly double the velocity."

There is another large white swan very closely resembling *Cygnus olor*, which has been considered indeed identical with it, and which is frequently imported from the Baltic, called by the dealers the Polish Swan. Mr. Yarrell, however, considers it distinct, the cranium being different, and the young especially never hatching grey, like cygnets of the Mute Swan, but being white from the very shell. From this last characteristic he has given it the name of *Cygnus immutabilis*.

THE WHISTLING SWAN is called by naturalists *Cygnus musicus;* and certainly the name of Musical Swan would be far more appropriate. The bill wants the protuberance of the preceding species, and is yellow; it is also somewhat smaller, and the neck is considerably shorter and thicker in comparison than that of the Mute Swan. It is only a winter visitor to England in the wild state, but has several times been kept in confinement; and its beautiful voice is alone enough to make its thorough domestication worth a little trouble. This feature has been described by many naturalists and other observers. Olaf says, "When a company of these birds passes through the air, their song is truly delightful, equal to the notes of a violin." Faber says, "Their tuneful, melancholy voices sound like trumpets heard at a distance." Another authority tells us that "the voice of a Singing Swan has a more silvery tone than that of any other creature;" and Schilling writes: "Sometimes the notes would resemble the sound of a bell, sometimes that of some wind instrument; still it was not exactly like either of them, just as a living voice cannot be imitated by dead metal. This peculiar concert realised in my mind the truth of what I had heard concerning the song of the swan, which I had before regarded as a poetical fiction." The notes of this swan, it is true, are given forth at all times; but it is not unlikely that when wounded or in distress they might be even louder and more prolonged than usual, and thus give rise to the beautiful legend of the sweet song of the dying bird.

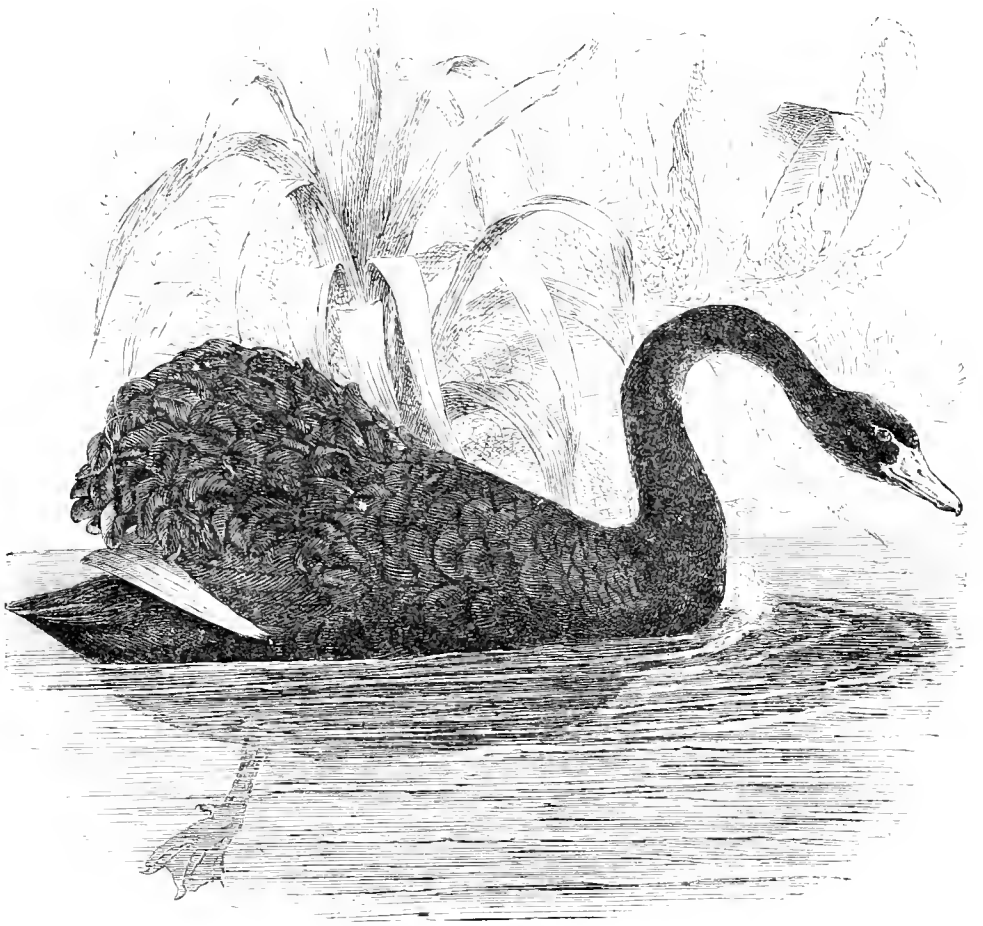
BEWICK'S SWAN is a still smaller white bird. The neck is very slender, but not long. It is said to be shy and timid in captivity, and we believe has never bred in such circumstances; it is, indeed, very difficult to obtain any of the rarer swans in pairs, the specimens captured being generally odd birds which have been wounded.

THE BLACK SWAN is the best known next to the Mute Swan, having been imported from Australia many years back. The eyes are scarlet, the legs black, the bill red tipped with white; the plumage a rather sooty black, shading on the edges of many feathers into a very dark grey. In the long and slender neck, and general outline, it resembles the Mute Swan, but it is not quite so large.

The Black Swan breeds freely—quite as freely as the Mute Swan—and the young are very hardy. These swans are now established favourites on our ornamental waters and in the Zoological

Gardens. It is, however, necessary to remark that they are apt to be more overbearing and tyrannical towards smaller water-fowl than the White Swans.

THE BLACK-NECKED SWAN (*Cygnus nigricollis*), sometimes called the Chilian Swan, is a most beautiful bird, imported from South America. The eyes are brown; the bill lead-colour, with the protuberance (which is strongly marked in this species) red; the legs reddish orange. The plumage is pure white, except the head and neck, which are jet black, all but a narrow streak of



THE BLACK SWAN.

white across the eye. In swimming the neck is held nearly straight, like that of a goose, not curved, as in most other swans. The young are said to grow with immense rapidity, which is worthy of note, with a view to domestication. The late Earl of Derby was the first to possess these beautiful birds, which for some time would not breed; but for several years past broods have now been reared annually in the Zoological Gardens at Regent's Park.

Very little can be said upon the management of swans. They are so large and powerful, and so intolerant of interference, or even the presence of man during the process of incubation, that any attempt at "management" is for the most part not only impossible, but positively dangerous. It

is, however, very probable that more complete domestication would remedy this, not only making the birds more amenable to reason, but increasing the number of eggs; and considering the size of the birds, the hardiness of the young, and their excellent quality, it is much to be wished that some serious attempt should be made to rear them more extensively for market purposes. As a rule, all that can be done is to give the old birds a little grain, and see that their privacy is not disturbed whilst sitting. When hatched, if very wild, the cygnets can be fed by throwing coarse oatmeal or grits upon the water; or soaked ground biscuit, such as Spratt's Poultry Food, may be given in the same manner; but if the old birds are tame and familiar, they will often bring the brood to feed from a trough placed at the edge of the water, in which the food should be placed, always in water, as for feeding grain to ducks. Mr. Fowler informs us that he has known swans' eggs hatched under geese, and brought up tame like ducks. This experiment is well worth repeating. The rapid growth of the cygnets of the Black-necked Swan would make attention to this variety with a view to breeding for market, specially desirable.

CHAPTER XXXVIII.

POSSIBLE ADDITIONS TO THE POULTRY-YARD.

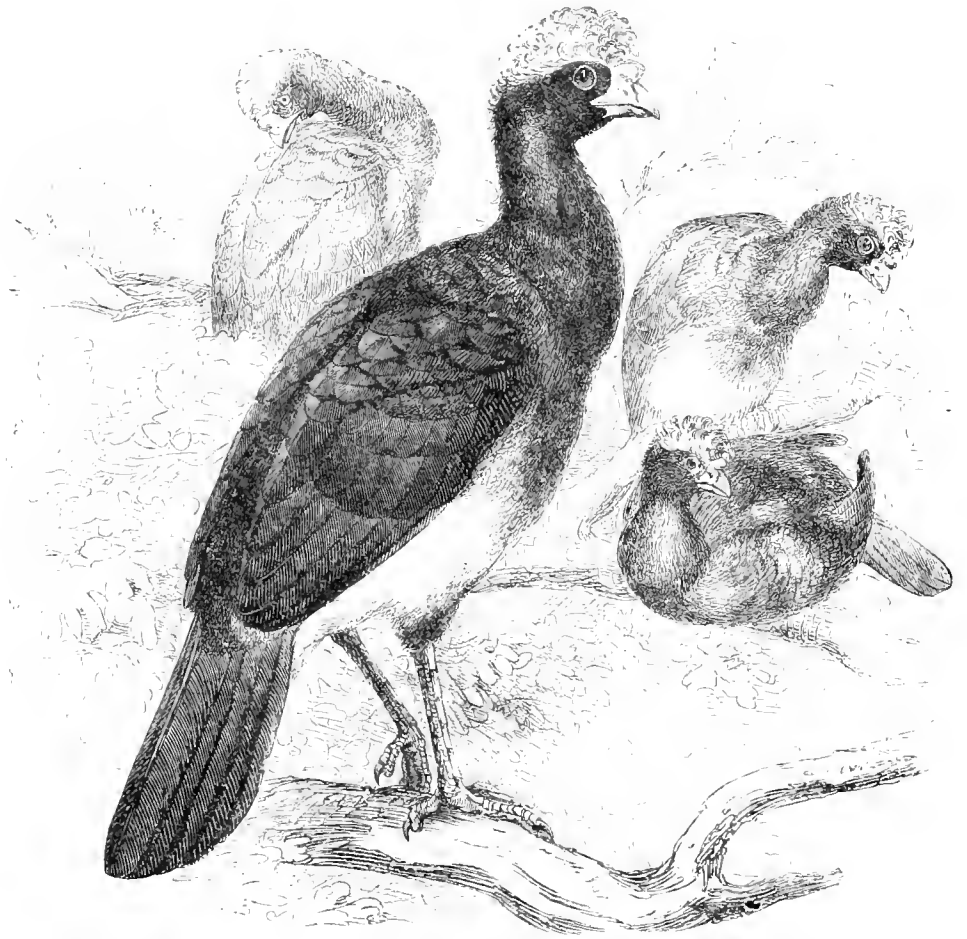
In concluding a work like the present, it will not be thought out of place if we finally devote a few lines to the inquiry of whether there are not creatures as yet undomesticated by man, but which are fully capable of such domestication, and of adding materially to the resources of the poultry-yard. To a certain extent, indeed, we have already anticipated this question; for in mentioning the Peacock Pheasant as a desirable addition to our ornamental birds, and suggesting the fitness of some varieties at least of the Swan family for market purposes, we have in fact already entered upon it. But a few words more especially to the point still seem desirable.

We cannot, of course, discuss any creatures altogether unknown, and it is just possible that even such may yet be discovered. It is true that most of the world has been ransacked now—indeed, only Central Asia, Africa, and the North Pole seem now left to the daring explorer; while it seems as if all three of these were to be "looked up" at once, and whatever they produce or contain, living or dead, brought to light and turned to the account of a utilitarian age—but even Africa, for instance, is a big place, and may contain other than Guinea fowls. It is rather aggravating to think what chances have been missed. What a bird for the poultry-yard the Dodo would have been; and what a breakfast for a poor but large family (we have noticed that poor families always *are* large) could have been provided from the egg of a Moa, with some left to put away in the larder after all had finished, if these birds had only managed to exist for just one hundred years later! The very qualities that led to their extinction would in all probability have favoured domestication; and it is just possible that inland Africa, for instance, may yet yield up similar creatures for the use of man. With these, however, we cannot at present deal; but looking around us upon such as are already in some measure known, we cannot resist the conclusion that some at least of these are capable of ministering to his use, were a little pains taken to make them available. We do not mean to say that such creatures are numerous, but we may instance at once the Curassows and Guans, the Crowned Pigeons, and the American Prairie Hen or Pinnated Grouse, as worth at least some effort in this direction; while the Tragopans or Horned Pheasants, the Impeyan Pheasants, and perhaps some others, are also deserving of a patient trial. A few words on each will suffice for our present purpose.

THE CURASSOWS (*Cracidæ*) are nearly as large as ordinary turkeys. They are partially arboreal in their habits, roosting in the trees, and occasionally making their nests there, but also incubating upon the ground. Their flesh is most delicious; they grow fast; and are tame, bold, and fearless in disposition; all which qualities point them out as extremely likely to prove useful to man; while their extremely handsome appearance is another strong recommendation. Any one who will give even a passing inspection to the collection of Curassows always to be found in the Regent's Park Gardens, and remark the large size, elegant plumage and appearance, and extremely tame and fearless manner in which the birds come to the front of their enclosure to take food from

the hand or be caressed, will join us in the wish that they should be introduced as regular denizens of the poultry-yard.

There are a considerable number of species of Curassows, or, as we should perhaps consider them, varieties, for they bear no marks of more distinctness than our various breeds of poultry, and differ far less than many of these do both in appearance and habits. Perhaps the best known and most common is that called the Crested Curassow, represented in our illustration. This bird is generally of a glossy black shining with green, passing to white on the under parts. The beak is black and stout, with a large yellow cere or naked surface at the base; and the crest is composed



THE CRESTED CURASSOW.

of small feathers curled in a very curious and elegant manner. This bird is common in Brazil, and *constantly kept tame* by the natives, running about the streets and into the houses without manifesting the slightest fear, and walking round the tables at meal-times to take food from the hand. The flesh is greatly valued; indeed, that of all the Curassows is stated by such as have partaken of it to surpass that of any other poultry except the Pheasant and Guinea Fowl.

The Red Curassow is a large bird, of a general chestnut-brown colour, certain parts, however, being picked out with yellowish white, particularly the tail-feathers and throat. The beak of this variety is horn-coloured, and the cere nearly black. It is crested like the preceding, and inhabits a more northerly region, being found in Peru, Mexico, and even in the West Indies. It is easily

tamed, and associates quite freely in the yard with other poultry. The Wattled Curassow is a much smaller bird. It inhabits the eastern parts of Brazil, and is easily distinguished by the cere at the base of the bill being a bright red. The Galeated Curassow is known at once by the absence of the feathered crest, and the presence instead of a peculiar-looking bony casque or helmet, which is of a livid slate-colour, the beak being bright red. The plumage of this Curassow is glossy black, except a little white on the belly and tip of the tail, and the legs are red, with yellow claws. Other varieties, such as that called Yarrell's Curassow, the Albert Curassow, &c., are also to be found in the Gardens; but it is doubtful if some at least of the so-called varieties are not hybrids. One of these has the bony casque of a beautiful yellow colour.

The Curassows are described by Dr. Sclater as "shy breeders, and certainly not adapted for acclimatisation;" but the space and accommodation allotted them at the Gardens are by no means adapted to fairly test this question, or to their natural habits; a neat, bare, sanded floor being anything but what is required. On this subject we would refer to our previous remarks, and repeat that such collections do not afford the needed facilities. Were the Curassows accommodated and studied to the same extent as the water-fowl, the result would no doubt be different. The problem *has* in point of fact been solved; for not only, as we have seen, are these beautiful birds both tamed and reared freely in their native countries, but Mr. Arneschoff most fully succeeded in domesticating them at his menagerie in Holland. Temminck tells us that the task was really and *thoroughly* done, and that the birds were then found as prolific as any domestic poultry, when the whole establishment and its precious fruits were lost and dispersed in the disorders caused by the wars which followed in the train of the Revolution. It is therefore quite certain that the object *can* be accomplished, and the Curassow is indeed far more naturally tame than either the Guinea Fowl or the Turkey, both of which have quite lately been reclaimed by man.

In undertaking a task so desirable, the habits of the birds should be remembered, and some amount of shrubs and trees, as well as grass, provided for them, and care be taken that while nesting they are as much as possible undisturbed. By degrees there is little doubt they might be habituated to open fields, as is the case with the Turkey; which in a wild state is quite as much a forest bird as the Curassow, but has now become quite independent of the woods.

THE GUANS (*Penelopæ*) are evidently closely allied to the Curassows, being found in the same localities and distinguished by the same habits. They are somewhat more slender in body, and the tail is longer in proportion. Among the Indians they are as frequently tamed as the Curassows, and constantly become so familiar as to allow themselves to be taken and caressed in the hand. One variety at least—the Crested Guan—was domesticated in Holland, and most of our remarks upon Curassows will also apply to this race of birds; the Guans appear, however, somewhat more arboreal in their habits than the preceding family, and not seldom make their nests in the branches of trees. This habit is not, however, universal, though it undoubtedly interposes somewhat greater obstacles to domestication than would be found with the Curassows.

THE TRAGOPANS, or Horned Pheasants, and the beautifully resplendent Monaul or Impeyan Pheasant, also appear to be adapted for domestication. They are reported to be readily tamed in the East, and to breed in captivity with little difficulty. Most of the pheasants, by their wild habits, small bodies, powerful wings, and long tails, are obviously ill-fitted for the poultry-yard; but both of the genera we have named, which have bodies as large as those of fowls, short tails, and small wings, might probably be domesticated with little difficulty, while their extremely beautiful plumage would render them distinguished ornaments of the yard. Of one variety of the Tragopans,

at least, Dr. Jerdon reports that it is readily domesticated in India, and that no difficulty is found in rearing the young. The plumage of the Horned Pheasants is beautifully variegated with large spots, of various colours, but chiefly white shaded by rims of black, red, or brown. Many of these spots are so beautiful as to give the bird almost an ocellated character.

The plumage of the male Impeyan Pheasant is the most resplendent and glossy it is possible to imagine, shining with blue, green, purple, and gold, except the saddle, which is a peculiar glossy white. The head is crested and the legs are spurred. It generally roosts in the trees, but it is worthy of note that in summer it is often known to sleep on the ground, which is all in favour of the success of artificial treatment. It is also remarkable that the males do not seem to pair, which is another condition most favourable to the fancier.

THE CROWNED PIGEONS may be thought to have little to do with a work on poultry. Strictly speaking, perhaps they have not, but for all practical purposes they have, being fully as large as domestic fowls, and being kept in poultry-yards pretty largely in the East Indies, where they are much valued for the delicacy of their flesh. The variety commonly known as the Crowned Pigeon (*Goura coronata*) measures no less than twenty-eight inches from the head to the tip of the tail, and the Victoria Crowned Pigeon (*G. Victoriæ*) is even larger. Both varieties inhabit the islands of the Indian Archipelago, but particularly New Guinea. They speedily become tame in confinement, and breed readily; though so far as experience has yet gone, the female only lays one egg at a time, instead of the pair laid by most of the *Columbæ*. The flesh is most white and delicate, and the appearance of the birds very handsome, as they stalk about with a stately and majestic air which seems peculiar to all crested birds, and bears a curious analogy to the notion most children cherish, of little kings and queens being born and growing up with their crowns on.

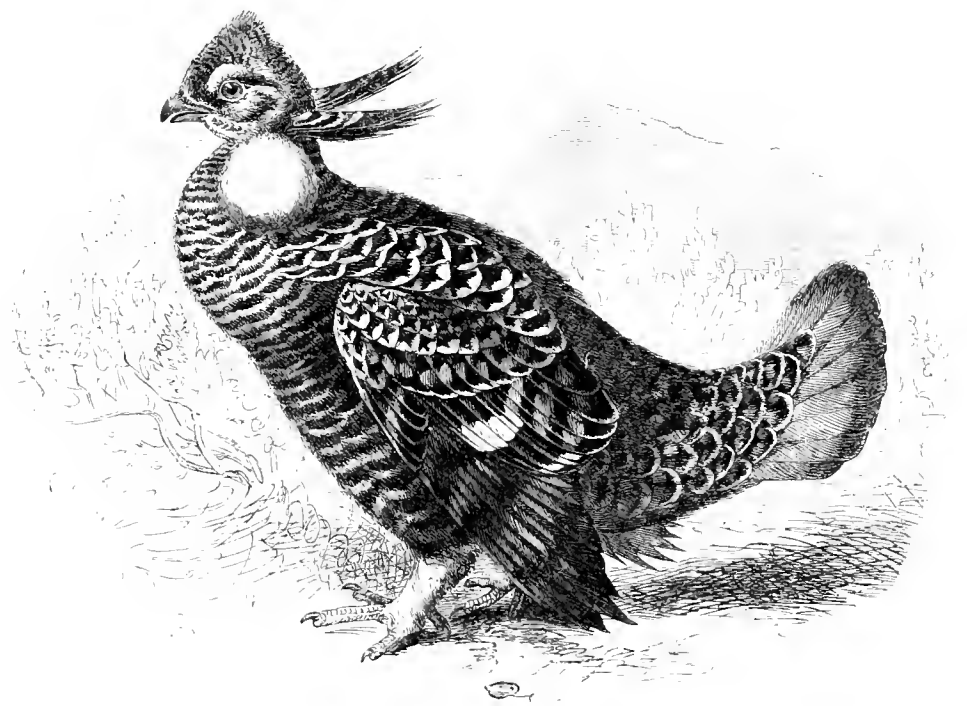
The Wonga-Wonga Pigeon, an Australian bird, might perhaps also repay effort in the same direction, being large in body, and the flesh most exquisite in delicacy and flavour. It is, however, a shy breeder in confinement so far, but, as Dr. Sclater remarks, "might perhaps do better in a more retired situation. It would be well worthy to have some pains bestowed upon it, as it is not only of considerable size, but, according to Mr. Gould's observation, a first-rate bird for the table, possessing a whiteness and delicacy of texture in its pectoral muscles which are unapproached by any other species of this widely-spread and useful family."

THE PRAIRIE HEN, or Pinnated Grouse, of North America, is a very pretty and quaint-looking bird, measuring about eighteen inches from the head to the tip of the tail. It is distinguished by two long tufts of feathers that hang down on each side of the neck, covering bare patches of skin, which are the outside surfaces of two bladders or cavities connected with the windpipe, and capable of inflation. The prevailing colour of the plumage is black, grey, or greyish brown, banded with red and white, and the parts of the leg not feathered, yellow. Formerly these birds were so plentiful that no one cared to shoot them; but they are rapidly becoming more and more rare, until they are now highly prized as a delicacy where once contemptuously rejected.

The Prairie Hen is more confined to the ground than any others of the genus, and generally roosts at night on a slight knoll. The gait much resembles that of the ordinary fowl, and so does the ordinary voice; but during the breeding season the male utters a very peculiar call. This is produced by inflating the bladders already described, which are then the size of an orange, after which he lowers his head, and expels the air in rolling notes, somewhat like those of a muffled drum. When empty the bird raises his head, refills the cavities, and repeats the performance. Audubon proved the truth of this hypothesis as to the production of the notes, by catching a

male and piercing the bladders with a pin, after which the bird was unable to call any more. When the season is over the bladders shrink and collapse, so as to be quite concealed under the tufts already spoken of. The food in a state of nature appears to consist chiefly of buds, seeds, and berries. Audubon saw an apple tree cleared of buds in a few hours.

The Prairie Hen lays ten or twelve eggs, generally in April or May. There is only one brood, unless the nest is destroyed, in which case the hen lays a second litter, but not so many as before. From these facts, and the number of eggs obtained from domesticated pheasants, it is probable that an increased supply could be obtained; but it is as a table delicacy or a pretty pet that the bird has the best claim to domestication. Audubon writes upon this point as follows:—"The Pinnated

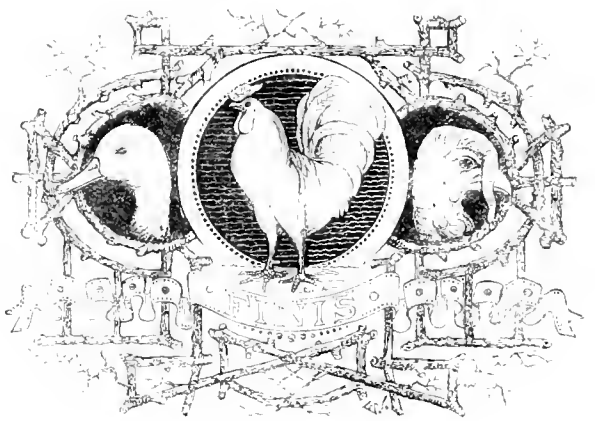


PRARIE HEN, OR PINNATED GROUSE.

Grouse is easily tamed and easily kept; it also breeds in confinement. I have often been surprised that it has not been fairly domesticated. While at Henderson, I purchased sixty that were expressly caught for me within twelve miles of that village, and brought in a bag laid across the back of a horse. I cut the tips of their wings, and turned them loose in a garden and orchard about four acres in extent. Within a week they became tame enough to allow me to approach them without their being frightened. I supplied them with abundance of corn, and they fed besides on vegetables of various kinds. This was in the month of September, and almost all of them were young birds. In the course of the winter they became so gentle as to feed from the hand of my wife, and walked about the garden like so many tame fowls, mingling occasionally with the domestic poultry. I observed that at night each individual made choice of one of the heaps in which a cabbage had grown, and that they invariably turned their breasts to the wind, whatever way it happened to blow. When spring returned they strutted, 'tooted,' and fought, as if in the wilds where they had received their birth. Many laid eggs, and a good number of young ones made their appearance; but the grouse at last proved so destructive to the young vegetables—

tearing them up by the roots—that I ordered them to be killed. So brave were some of the male birds that they never flinched in the presence of a turkey-cock, and now and then would stand against a dunghill cock for a pass or two before they would run from him."

Mr. C. J. Ward, in the New York *Pet Stock, Pigeon, and Poultry Bulletin*, for July, 1873, gives a less favourable account of his attempts at domesticating this bird, but he tried hatching eggs under hens. Perhaps he took *too much pains* with them, as it will be seen that Audubon left them very much to themselves, and we have also seen that Jungle Fowls do best similarly treated. He thinks, however, that it can be accomplished, and adds, "They are splendid table birds, and very beautiful when in good condition." The principal difficulty will perhaps lie in the destructive propensity Audubon alludes to; but this might in a degree be provided against by giving up runs to them furnished with suitable plants—or it could do little harm on a good grass-run. On the whole, however, this bird does not perhaps hold out such good hopes of successful domestication as some of the preceding.



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